FACULTY OF COMMUNITY AND HEALTH SCIENCES

THE DEVELOPMENT OF GUIDELINES THAT INCORPORATE INTERPROFESSIONAL PRACTICE PRINCIPLES INTO REHABILITATION SERVICES AT A PRIMARY HEALTH CARE FACILITY

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Type of Thesis: Doctoral Thesis

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Date: 2022

ABSTRACT

There has been a global shift to an interprofessional model of care as interprofessional practice (IPP) has been highlighted as an innovative way to fight the challenges faced in the health system. The implementation of IPP is targeted at all employees who participate in the provision of healthcare services. IPP can happen at all levels of health care. The primary health care (PHC) level is seen as the core of a sustainable health system, and this study focused on the PHC level.

Creating equal access to high-quality, patient-centred healthcare to the entire population is the goal of the provincial health plan known as Healthcare Plan 2030. Through the provision of rehabilitative care at PHC facilities, the policy places a focus on curative and preventative services. Although the Healthcare Plan 2030 gives health service providers a guide to the fundamentals of service delivery, but it falls short of offering a conceptual framework to guarantee its successful implementation. A rehabilitation model was created as a conceptual framework for health service providers in the rehabilitation sector at the PHC level in response to this shortcoming. However, the rehabilitation model does not emphasize the tasks and skill set needed to carry out the various phases successfully and fails to incorporate an IPP focus. It is desirable to view the tasks and necessary skills through the perspective of IPP given the global move to an interprofessional model of care. The aim of this project is to develop guidelines that could be used to incorporate IPP principles into rehabilitation services at PHC level.

This mixed-method case study was carried out in a PHC centre in the Western Cape using a logical framework (logframe) approach. The logframe approach involves two stages, which each comprises of phases. Stage one is the analysis stage and consists of three phases. *Phase one* ascertained the knowledge, attitudes, and perspectives of health service providers on IPP, four focus group discussions were held during the first phase. In *phase two*, the practices that encourage IPP at the level of PHC was identified through a systematic evaluation of pertinent literature. In *phase three*, the researcher triangulated the data gathered in the earlier phases of the analysis stage. This phase sought to ascertain how the IPP-promoting activities may be applied to the PHC facility's contextual issues. The researcher was able to plot the data into a

logframe matrix to identify the outstanding data at the conclusion of the logframe approach's analysis stage.

The second stage of the logframe approach is the planning stage. This stage had only one phase, which constituted the fourth phase of this study. In *phase four*, the guidelines that ensure the successful translation of the activities into the rehabilitation sector at PHC level was developed through a Delphi study. In addition, the Delphi study allows experts to reach consensus around their views around the feasibility of the developed guidelines. In the first round of the Delphi technique, the participants answered open-ended questions related to the perceived feasibility of the activities, to promote IPP at PHC level. Thematic analysis of the responses allowed the researcher to develop a 5-point Likert scale. A consensus rate of 70% was used to finalise the guidelines that incorporate IPP principles into rehabilitation services at PHC level.

Ethical clearance and permission to continue with the study was obtained from the BioMedical Research Ethics Committee (Ethics number – BM19/1/38) at the University of the Western Cape, and Western Cape Department of Health. Data collected from this thesis were written for publication in peer-reviewed journals with a strong focus on PHC, public health, and interprofessional education and practice.

In *phase one* of the study, the findings showed that the PHC facility's health service providers were unable to define IPP. They connected a multidisciplinary approach to their understanding of IPP. Contextual barriers existed at the facility that prevented the use of IPP. *Phase two* identified four main activities that encourage IPP at the level of basic health care. The systematic review further highlighted the smaller exercises were used to incorporate these main activities into practice. In *phase three,* the data collected in in the first two phases was triangulated. Findings from this phase demonstrated that the rehabilitation model's objectives are suitable for addressing the problems at the facility. Additionally, the rehabilitation model should contain IPP-promoting activities to successfully implement each step. The results show that, to address the contextual issues raised in the focus group discussions at the chosen PHC facility, the actions identified in the systematic review can be implemented in the rehabilitation sector. Six activities were recommended for inclusion into the phases of the rehabilitation

model to address contextual obstacles at the conclusion of the analysis stage of the logframe approach. In *phase four*, 15 experts were shown the rehabilitation model with activities promoting IPP implemented at each phase. The first round of the Delphi survey identified 26 guidelines for successfully putting these activities into practice. The 26 guidelines were agreed upon by the experts in the second round of the Delphi research. The 26 guidelines are in keeping with the IPP fundamental principles, according to the results of the Delphi survey. The guidelines developed in this Delphi study align to the sub-competencies that strengthen the interprofessional core competencies.

In conclusion, the resultant logframe matrix illustrates in detail how the contextual issues revealed in the first phase of this research can be addressed by the activities highlighted in the second phase of this research. In addition, the logframe matrix depicts precisely how these activities might be executed within the facility to resolve the issues. As the adoption of these guidelines would ensure that each phase of the rehabilitation model is properly executed, the Healthcare Plan 2030's rehabilitation sector at PHC level would also be successfully implemented. Thus, the guidelines serve as an operational framework to ensure that the population receives quality, patient-centred care.

This study could be transferred into several sectors at the PHC level to support the successful implementation of the Healthcare Plan 2030 through the lens of an interprofessional model of health service delivery.

KEYWORDS

Guidelines

Health professionals

Interprofessional practice

Interprofessional rehabilitation model

Primary health care

Rehabilitation

LIST OF ABBREVIATIONS

CHC - Community health care centre

IPE - Interprofessional education

IPEC - Interprofessional Education Collaborative

IPP - Interprofessional practice

PHC - Primary health care

DECLARATION

I declare that the following doctoral dissertation *"The Development of Interprofessional Guidelines into a Rehabilitation Model at a Primary Health Care Facility"* is my own work. This work has not been submitted for a degree or examination to any other institution. Through complete references, I have acknowledged all the sources I have used or quoted in this work.

Student Name: Luzaan Kock

Date: 2022

Signed: .....

DEDICATION

Every time I pulled all-nighters in my undergraduate studies, my grandma would tell people of her admiration of my work ethic. Despite disappointments and tears throughout that undergraduate journey, her constant encouragement and support convinced me that I was better than the girl who failed five modules in her first year.

Fast-forward 12 years, and I wish she could be here to boast about this achievement too. Moreover, I wish that I could take a photo with her like at my confirmation, matric farewell, 21st birthday, kitchen tea and wedding. I can only settle for the next best option, to dedicate this thesis to her. Roslyn Kock (nee Booysen), *ek wy hierdie tesis aan ouma toe*.

ACKNOWLEDGEMENTS

I cannot imagine a time in my life that I prayed more than I have in these last three years. The blessings and grace bestowed on my family and household, has helped me to see what a mighty God we serve.

To my supervisors, Professors Mlenzana and Frantz, thank you for your dedication to my growth in all aspects of my life, it has been a huge blessing to me. Prof. Frantz, I will forever be indebted to Prof. for the opportunities, spiritual guidance, and prayers. Thank you for the recommendation to be included into the University Staff Doctoral Programme, which not only provided me with financial support, but also international traveling and networking opportunities. I would like to extend my gratitude to the University Capacity Development Grant for my inclusion in the University Staff Doctoral Programme, and the South African Medical Research Council through its Division of Research Capacity Development under the Bongani Mayosi National Health Scholars Programme for the financial support.

To my thesis coach and friend, Jill, and the Student Development Centre, thank you for the encouragement and gentle feedback. My mentor, Prof Strebel, thank you for Prof's regular check-in emails and input. My colleagues at the Interprofessional Education Unit, especially the *friendery* – Labeeqah and Claudia, thank you for the constant support and love.

Thank you to all my friends and extended family for your regular check-ins and messages of encouragement and support. To my parents, thank you for making me see that I am destined for big things, which I will always strive to achieve. Adnill and Chanelle, thank you for your love and support during this time. My parents-in-law, thank you that I can always count on you both. My husband, Brynmor, thank you for feeding me, cleaning after me, and giving me enough space to navigate through this journey. I am eager to embark on this new adventure with you. To our new adventure, Rosalie, no title will ever be as important as the one you gave me. But, upon successful completion of this degree, you will have to call me Dr Mommy for at least two years. May this dissertation encourage you to stand on the shoulders of giants.

PREFACE

The PhD in Physiotherapy was submitted as a PhD by publication. The findings presented in this study were considered contemporary and important in the field of interprofessional practice. Therefore, a PhD by publication was considered.

A PhD by publication is beneficial to the PhD candidate, the discipline, and the academic institution. As central to a PhD by publication, the findings from this study were: i) submitted to peer reviewed journals, and ii) presented at local and international conferences. This PhD study has been exposed to various informed discussions.

Journal articles published

Kock, L., Mlenzana, N., & Frantz, J. (2021). Perceptions, attitudes and understanding of health professionals of interprofessional practice at a selected community health centre. African Journal of Primary Health Care & Family Medicine, 13(1), 6 pages. doi:https://doi.org/10.4102/phcfm.v13i1.2724

Africa, L., Frantz, J., Mlenzana, N. (2022). Analysis of a primary healthcare facility for the development of an interprofessional intervention: A logical framework approach. The Southern African Journal of Public Health, 5(3): 77-85. Doi: https://doi.org/10.7196/SHS.2022.v5.i3.157

Journal articles under review

Africa, L., Frantz, J., Mlenzana, N. Activities needed to promote interprofessional practice at primary health care level. Journal of Social and Health Sciences

Africa, L., Frantz, J., Mlenzana, N. Interprofessional practice guidelines to be incorporated into rehabilitation services at primary health care level. The International Journal of Environmental Research and Public Health

Conferences

Kock, L., Mlenzana, N., Frantz, J. Activities Needed to Promote Interprofessional Practice in the Rehabilitation Sector at Primary Health Care Level: A Systematic Review. Poster presented at the World Physiotherapy Congress, 9-11 April 2021, virtual conference

Africa, L., Frantz, J., Mlenzana, N. The Development of Guidelines that Incorporate Interprofessional Practice Principles into Rehabilitation Services at a Primary Health Care Facility. A paper presented at the Towards Unity for Health Conference, 17-18 May 2022, virtual conference

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LIST OF DEFINITIONS

Case study: This is an in-depth study of a specific "case" in the form of a site, individual, or policy (Yin, 2018).

Collaborative practice: This occurs when multiple health workers from different professional backgrounds work together with patients, families, caregivers, and communities, to deliver the highest quality of care (WHO, 2010).

Core Competencies (in health care): This comprises the enactment of knowledge, skills, and values/attitudes that define working together across professions, with other health care workers, as well as clients, their families, and communities, as appropriate to improve health outcomes in specific care contexts (Interprofessional Education Collaborative Expert Panel, 2011).

Interprofessional education: This occurs when two or more professions learn about, from, and with each other, to enable effective collaboration and improve health outcomes (WHO, 2010).

Interprofessional practice: This is a means of improving patient experience, improving population health outcomes, decreasing healthcare cost, and improving the work experience of health professionals (Kahlili et al., 2019).

CHAPTER 1

INTRODUCTION

1.1. Introduction to chapter

In this chapter, the researcher introduces the study's context and rationale. The researcher then provides context for interprofessional practice and an overview of primary health care in South Africa. In addition, the researcher formulates a problem statement, pertinent research questions to be answered, and the aim, objectives, and significance of the study. Finally, the researcher provides an outline of the chapters.

1.2. Background

Interprofessional practice (IPP) has been labelled as an innovative collaborative strategy for enhancing the patient experience and population health, reducing healthcare costs, and fostering a happy work environment for health service professionals (Khalili et al. 2019). This collaboration across diverse health providers, patients, families, and carers enhances health outcomes (World Health Organization [WHO], 2010). Given the advantages of a collaborative approach to health care, there has been a global shift toward an interprofessional model of health.

To create a workforce that is capable of collaborating, interprofessional education (IPE) has been introduced into the health professions education (HPE). IPE is a learning strategy that promotes health professionals to learn with, from, and about one another, with the primary goal of enhancing teamwork (WHO, 2010).

1.2.1. IPE core competencies

The IPE core competencies build upon the profession-specific capabilities and guide the development of the HPE curriculum (Schmitt et al. 2011). The IPE core competencies are the skills and knowledge required by all students in the health professions to collaborate effectively to provide a safe, person-centred health system of high quality (Interprofessional Education Collaborative [IPEC] 2016). Under a single domain of interprofessional collaboration, the IPEC (2016) identified four competencies: interprofessional communication, teams and teamwork, values/ethics, and roles/responsibility (Figure 1.1). Interprofessional collaboration is viewed as a distinct area since it encompasses a professional's potential to improve the patient health care experience, boost population health, and reduce the cost of healthcare.

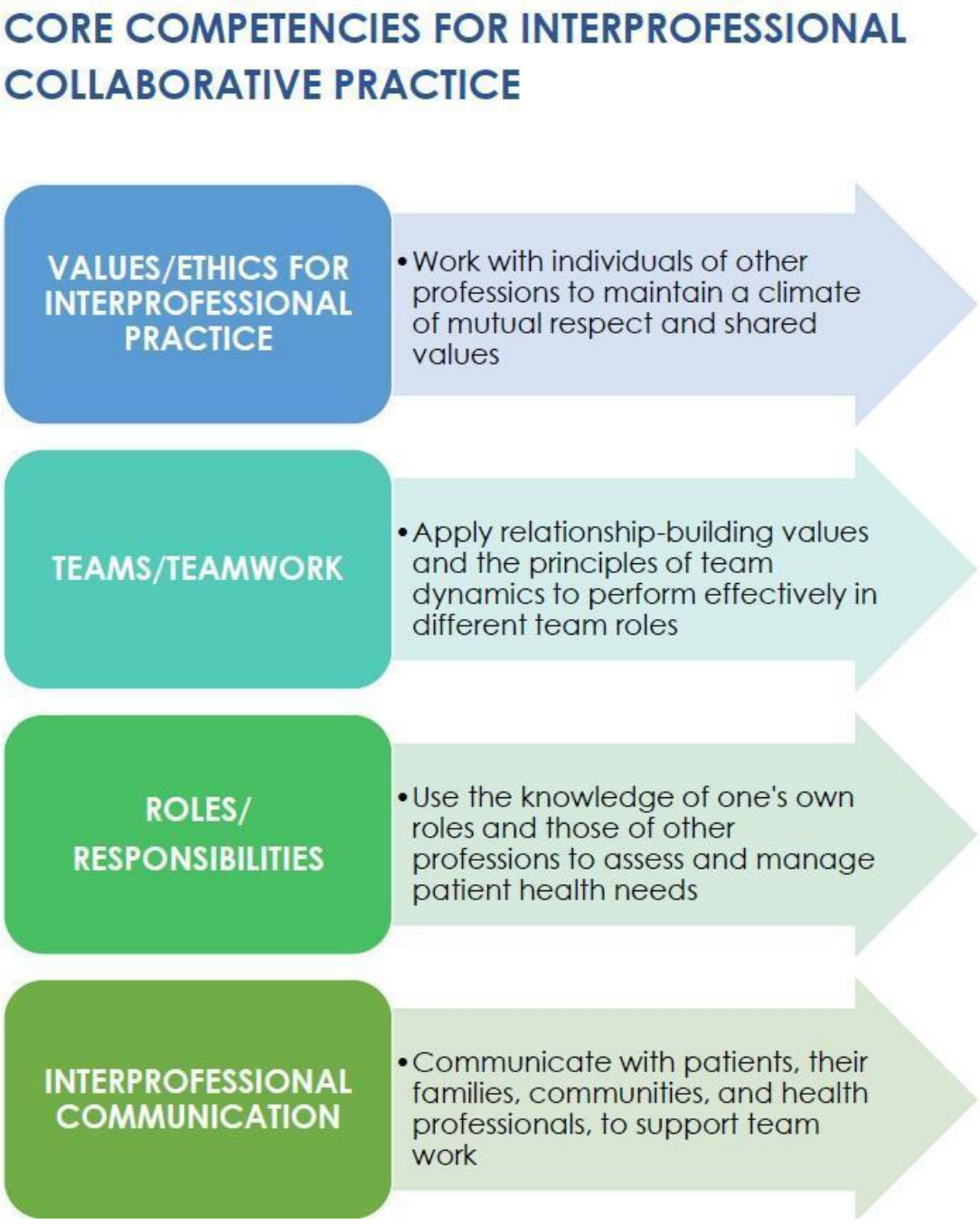

Figure 1.1: Interprofessional Core Competencies

Source: Interprofessional Education Collaborative, 2016

Each of the four IPE core competencies has a set of sub-competencies that can be implemented throughout the learning continuum (IPEC, 2016). However, health professionals who have graduated several years ago may not have been enrolled in a HPE system that trains professions alongside one another, but they are now required to collaborate (Groessel & Vandenhouten, 2019). The IPE basic skills are the basis for a learning continuum in interprofessional

development across the professions, as well as the learning trajectory for lifelong learning (Interprofessional Education Collaborative Expert Panel, 2011). This demonstrates the need for training opportunities to increase these health professionals' exposure to the IPE core competencies.

1.2.2. Continued education

In addition to influencing the development of HPE curricula, IPE core competencies describe training for qualified health professionals (IPEC, 2016). The IPE basic skills are the basis for a learning continuum in interprofessional development across the professions, as well as the learning trajectory for lifelong learning (Interprofessional Education Collaborative Expert Panel, 2011). In addition, the IPE core competencies promote interprofessional dialogue with the objective of establishing standards of practice for ongoing professional development (Suter et al. 2009). Developing and improving these qualities increases health workers' capacity to collaborate effectively. As a result, when developing IPP training, it is critical to consider the IPE core competencies.

While working interprofessionally requires a unified perspective on health service delivery among professionals from various professions (Schott et al. 2020), the incorporation of IPP no longer focuses solely on health professionals but also on all facility staff members who play a role in service delivery (Fraher & Brandt, 2019). This emphasizes the significance of taking the level of the health system into account when developing training.

1.2.3. Primary health care

It is emphasized that primary health care (PHC) is the core of a sustainable health system and the key to achieving universal health coverage (United Nations [UN], 2019). In Africa, however, human resource problems have influenced the urge to ensuring that everyone has access to health care (African Forum for PHC [AfroPHC], 2020). To counteract this difficulty, the AfroPHC vigorously promotes teamwork in the health industry. The AfroPHC is comprised of PHC workforce stakeholders with diverse professional backgrounds who have a common goal of ensuring comprehensive, accessible, high-quality, community- and team-based PHC service delivery in Africa (AfroPHC, 2020). PHC is the context-specific understanding of a population to provide first contact, priority health interventions that emphasize the economic, social, and political dimensions of human development (WHO & United Nations Children's Fund [UNICEF], 2018). Fraher and Brandt (2019) state that IPP must be created with patients

and demographics in mind. Confirming that the PHC level is the optimal environment for the deployment of IPP.

An efficient PHC workforce includes a variety of purposefully trained, skilled, and competent staff, as well as teamwork amongst management, administrative, academic, and health professional personnel (WHO & UNICEF, 2018). To ensure a PHC-ready workforce, collaboration between health workers and communities is particularly vital (WHO & UNICEF, 2018). Before the establishment of a PHC workforce capable of effective collaboration can be considered, it is necessary to comprehend the South African PHC facilities and practice models that match with health policy objectives.

1.2.4. South African primary health care facilities

The PHC philosophy permitted South African provinces to delegate health responsibility to the district level (Kautzky & Tollman, 2008). However, the South African health system lacked structural integration, as the separately functioning health departments failed to match with administrative boundaries (Kautzky & Tollman, 2008), resulting in the underperformance of the PHC method in certain regions of the country. In this study, the Western Cape Department of Health [WCDOH] is investigated as one of the South African health departments. Province of Western Cape comprises six of the 52 national health districts (Swanepoel et al. 2014).

Due to human resource shortages at the PHC level, there are cases in which the referred-to discipline is not represented at the facility (Ned et al. 2017). Should these human resource limitations exacerbate the overloaded status of public health institutions, it is essential to decrease incorrect referrals. As the number of patients accessing a given health care provider increases due to a rise in incorrect referrals, the patients' time spent in the waiting room grows (Bahadori et al. 2017). In addition to lengthier patient wait times, incorrect referrals result in decreased patient satisfaction (Bahadori et al. 2017). Lack of interest in learning about other experts and disdain for the skills and knowledge of other professionals contribute to incorrect recommendations. In view of the aforementioned and other challenges faced at all levels of the health system, the WCDOH introduced a range of provincial health plans (Figure 1.2).

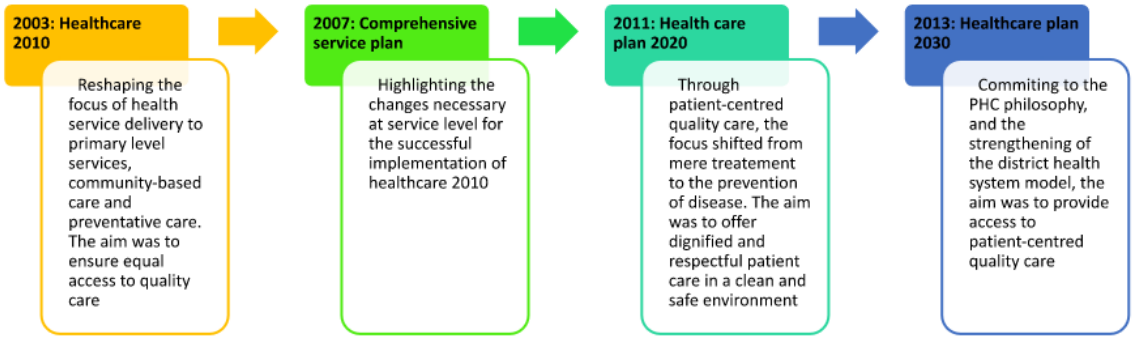

Figure 1.2: Western Cape Provincial health policies (2003-2013)

The Healthcare Plan 2030, the third wave of the Healthcare Plan 2010 and the Healthcare Plan 2020, intends to improve access to patient-centred, high-quality healthcare. As it provides health services to most of the people, the policy reaffirms that PHC is the most important aspect of the healthcare system (WCDOH, 2013). PHC facilities provide a variety of curative and preventative services, as well as the capacity for rehabilitative care (WCDOH, 2013).

Rehabilitation is accessible at all levels of health service provision, in accordance with the WCDOH's objective of improving the person-centred approach and delivering integrated health care (WCDOH, 2013). There are personnel shortages at the PHC level in the rehabilitation sector in the Western Cape, resulting in significant patient wait times (Mlenzana et al. 2013). Frequently, PHC facilities have only one specialty represented; in certain cases, a single employee services multiple sites (Webb et al. 2019). In lieu of a backlogged booking system, a collaborative platform where health specialists in rehabilitation can work together is required to ensure that patients receive the essential care during a single visit. Health facilities have devised referral systems to provide a single patient with the services of two or more health professionals (Ned et al. 2017).

Regarding the rehabilitation sector, the Healthcare Plan 2030 aims to mainstream and strengthen rehabilitation services as part of the general health services platform (WCDOH, 2013). Rehabilitation integrates interventions from the curative, promotive, and preventative components of PHC (Sherry, 2014); hence, it is a crucial aspect of comprehensive PHC. However, obstacles impede the proper implementation of Healthcare Plan 2030 in the rehabilitation sector (Mlenzana & Frantz, 2017). Among these obstacles is the absence of information that is communicated to service providers regarding the policy's implementation

at their facility. The Healthcare Plan 2030 strategy was only "what" the government sought to achieve; nevertheless, there was a deficiency in "how" the public might receive quality rehabilitative care.

The Healthcare Plan 2030 serves as a guideline for health professionals to guarantee that the population receives quality services. To educate health professionals on how to implement the Healthcare Plan 2030 at the PHC level there is a need for a conceptual framework or model to guide health professionals. To address this need, Mlenzana and Frantz (2017) designed a rehabilitation model. The model highlighted the following aspects that are needed for rehabilitation service namely: access to rehabilitation services; patient-centred rehabilitation; caregiver and family involvement; education; and rehabilitative treatment options (figure 1.3).

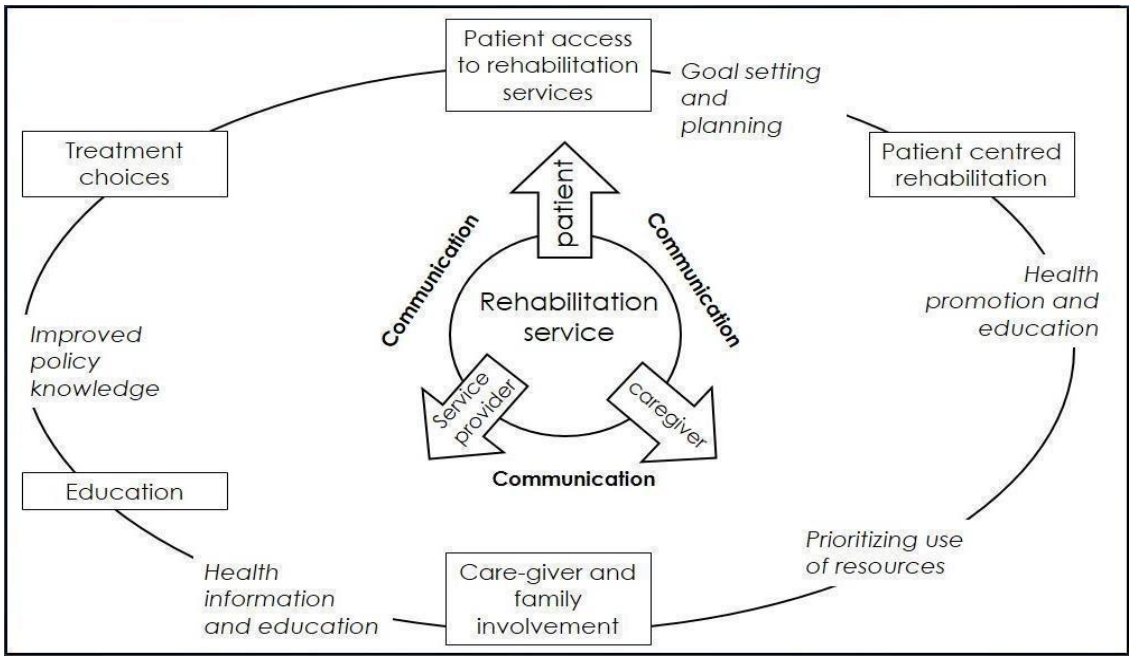

Figure 1.3: Rehabilitation model

Source: Mlenzana & Frantz (2017)

The rehabilitation model emphasizes the significance of communication among the service provider, patient, and caregiver. Once the patient has access to health care, the patient's intervention goals can be determined. To promote patient-centred rehabilitation in the second phase, health promotion and education are provided, while resource utilization is prioritized. In the third phase, the caregiver and family are involved, and the health professional provides health education and information in preparation for the fourth phase. Education is associated with policies that influence their health and treatment alternatives for their health problem(s).

Therefore, the patient will be enabled to actively participate in their treatment decisions. The rehabilitation model was intended to conceptualize the Healthcare Plan 2030, but its implementation remains a barrier.

The rehabilitation model fails to address communication between health professionals. Integrated provision of care, with health professionals from various professional backgrounds working together in a cohesive manner, is one of the four pillars of the Healthcare Plan 2030 (WCDOH, 2013). In addition, the Healthcare Plan 2030 requires competent staff to render health services (WCDOH, 2013). Therefore, the required skills and knowledge need to be developed and enhanced, to ensure the intended outcome of the provision of quality patient-centred health care for all. Guidelines relating to the knowledge and skills needed at every phase, would assist facility management to implement the rehabilitation model successfully at the facilities. Consequently, as this model for rehabilitation is considered, as well as the basic skills and knowledge required to implement it, it would be ideal to review the methods that promote collaboration.

The rehabilitation model does not address health professional communication. One of the four pillars of the Healthcare Plan 2030 is integrated care delivery, in which health professionals from a variety of professional backgrounds work cohesively together (WCDOH, 2013). Additionally, the Healthcare Plan 2030 requires competent staff to deliver health services (WCDOH, 2013). To achieve the desired result of providing quality patient-centred health care for all, it is necessary to develop and improve the necessary skills and knowledge. Guidelines pertaining to the knowledge and abilities required at each level would aid facility management in the successful implementation of the rehabilitation model at the facilities. As this model for rehabilitation and the basic skills and knowledge required to apply it are considered, it would be prudent to examine the activities that promote IPP at PHC level.

1.3. Problem statement

A global transition from a medical model of health care to an interprofessional model of care has occurred (Frantz & Rhoda, 2017). Healthcare Plan 2030 is a provincial health policy to be implemented in the Western Cape (WCDOH, 2013). Due to the policy's emphasis on rehabilitation, rehabilitation services must be of a nature that guarantees access to high-quality

health care (WCDOH, 2013). The Healthcare Plan 2030 provides a framework of the principles of service provision to health professionals but fails to provide a conceptual plan to ensure their successful implementation. This has led to Mlenzana and Frantz developing a model for rehabilitation (2017). However, concerning the operationalization of the Healthcare Plan 2030, the designed model had some deficiencies. At the time of the establishment of the rehabilitation model in 2013, this global shift to an interprofessional paradigm of health care had not yet occurred. Consequently, the model primarily fails to incorporate IPP in the main. In addition, the model fails to emphasize the skills and knowledge that health service providers must integrate into clinical practice to implement all phases of the rehabilitation model successfully. As IPP has assumed a prominent role in addressing the health needs of society, there is a need for a transformation in all sectors and levels of the healthcare system. However, the rehabilitation model fails to incorporate the move to an interprofessional model of treatment. Therefore, the introduction of IPP-based guidelines into the rehabilitation model will ensure that society obtains high-quality, patient-centred rehabilitative care at PHC level.

1.4. Research Questions

In this study, the researcher addresses the following main research question: "How can guidelines that promote core principles of IPP be integrated into the rehabilitation services at PHC level?"

To answer the main research question, the following sub-questions were formulated:

What are the perceptions, attitudes and understanding of IPP among health service providers at a selected PHC facility?

What are the ideal activities needed to promote IPP among health professionals at PHC level?

How can activities that promote IPP be incorporated into the rehabilitation sector to address contextual challenges at a PHC facility?

What do experts consider to be rehabilitation-specific guidelines for activities that promote IPP at the level of PHC, and how do they assess the feasibility of such guidelines?

1.5. Aim of the study

The aim of this study was to develop guidelines that could be used to incorporate the core principles of IPP into the rehabilitation sector at a PHC facility.

1.6. Objectives of the study

The objectives of this study are to:

i. Explore and describe the perceptions, attitudes and understanding of health service providers for IPP at a selected PHC facility *(Chapter 3)*;
ii. Describe the activities needed to promote IPP at PHC, through a systematic review *(Chapter 4)*;
iii. Determine how the activities that promote IPP can be incorporated into the rehabilitation sector to address contextual challenges *(Chapter 5)*; and
iv. Develop and determine the feasibility of guidelines that promote IPP in the rehabilitation sector at the PHC level using a Delphi study (Chapter 6).

1.7. Significance of the study

Implementing a successful rehabilitation model to strengthen rehabilitation services is contingent on the operational plan's efficacy (Stans et al. 2013). According to the researcher, the development of activity guidelines that promote IPP would provide health service providers with a plan for successfully implementing a rehabilitation model at their facility. IPP has been identified as a critical strategy for addressing a population's health needs (Fraher & Brandt, 2019). The activity guidelines must align with the objectives and pillars of the 2030 Healthcare Plan. If policymakers want to ensure the successful implementation of Healthcare Plan 2030, they must develop a model with fundamental components and necessary skills. The findings of this study would give the government recommendations for developing and implementing models to ensure the successful implementation of the Healthcare Plan 2030 across all sectors and levels of care. The development of skills that health service providers need to improve health outcomes for the population would also be outlined in the guidelines. These guidelines would be disseminated at a community health care centre via workshops and pamphlets.

1.8. Chapter outline

The chapters of this thesis are structured to address each of the objectives of the study. In the first chapter, the researcher outlines the problem to be addressed in this study. In the second chapter, the research methods that were employed are described. This dissertation is presented as a PhD by publication format. Chapters may present with a variety of referencing formats because journal requirements were considered. Consequently, a reference list is given at the end of each chapter. The study's objectives will be covered in chapters three through six. In the

final chapter, the researcher aims to draw conclusions from the findings. Each chapter is summarised as follows:

Chapter One

This chapter provides overall background information on the motivation for the study and the importance of IPP. IPP encourages collaboration to ensure access to patient-centred, high-quality healthcare. There has been a call for IPP to be implemented in various healthcare sectors. It has been emphasized that the PHC level of care is an essential component of a health system. The South African health system has adopted a district health services approach, which has resulted in provincial health policies aimed at achieving universal health coverage. The Western Cape has implemented the Healthcare Plan 2030 to provide access to patient-centred, high-quality care. A rehabilitation model has been developed to ensure the successful implementation of the Healthcare Plan 2030 at PHC level considering the sector's challenges. There are insufficient details regarding the skills and knowledge required for a health professional to implement this model competently. The IPP principles can serve as a benchmark for the improvement of these skills and knowledge. In addition, the problem statement, purpose, and objectives, as well as the significance of the study, are presented in this chapter.

Chapter Two

This chapter's purpose was to explain the study's basic methodological framework while using evidence from the literature to support the decisions made. A deductive pragmatist philosophical stance enabled the researcher to utilize the participants' insights to answer the research questions. A case study approach was used to gain a comprehensive understanding of a PHC facility at a particular time. The Logical Framework approach permitted the researcher to conduct the research using multiple methods of data collection in two subsequent stages, namely the analysis and planning stages. In the first stage, three steps are required to complete the situational analysis. In the first step, FGDs were conducted to investigate the understanding, perceptions, and attitudes of health professionals regarding IPP. The second step of this stage, a systematic review, centred on IPP promotion at the PHC level. The final step of the analysis phase is the triangulation of the data collected in the preceding two steps to incorporate the activities into a rehabilitation model that addresses contextual challenges. Through a Delphi study, Stage 2 of the logical framework approach involves the development and evaluation of

guidelines for the activities that promote IPP at each phase of the rehabilitation model. The methods for each phase will be expanded upon.

Chapter Three

This chapter addresses the first objective, which explored the perceptions, attitudes, and understanding of IPP among health professionals. Staff interacting with patients in need of rehabilitation participated in an FGD. The findings in this chapter offer contextual information that could be enhanced by the application of IPP.

Chapter Four

A systematic review addresses the second objective of this study, which involves describing the activities required to promote IPP among health professionals at PHC level. The review results are analysed using the RE-AIM framework. Activities that can be introduced into clinical practice to promote IPP at the PHC level are those that have been identified in this chapter. As a result, at the chosen PHC facility, the activities can be used to promote IPP in the rehabilitation sector.

Chapter Five

The researcher covers objective three in this chapter, which is to assess how well the rehabilitation model addresses contextual challenges and what activities can support IPP at each stage of the model. This was made possible by data triangulation. According to the phases of the rehabilitation model, the data acquired for objectives 1 and 2 are analysed.

Chapter Six

The final objective, which is to design and assess the feasibility of the IPP guidelines using a Delphi study, is covered in this chapter. The guidelines for each activity were created using the Delphi study, which was also used to gauge expert consensus on the developed guidelines.

Chapter Seven

This chapter provides a summary of the study's findings and conclusions. In addition, recommendations are highlighted that emerged from the development of guidelines to be incorporated into practice.

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CHAPTER 2

METHODOLOGY

2.1. Introduction to the chapter

In this chapter, the researcher describes the study's methodological framework. Using a systematic review, qualitative focus group discussions, data triangulation, and a Delphi study, a multimethod case study design was employed. The research setting, research design, justification for using this method, data collection, data analysis, and ethical considerations are discussed.

2.2. Philosophical worldview

According to Saunders (2012), a researcher's worldview can be inferred based on the research philosophy they choose. These assumptions determine the foundations of the researcher's study strategy and methodologies (Saunders, 2012). This researcher chose a pragmatic stance for this study. Pragmatists acknowledge that there are numerous ways to understand a particular condition and conduct research (Saunders, 2012). In this study, the researcher made use of the fact that interprofessional practice (IPP) may be seen in a variety of ways to conduct research. Pragmatists, like positivists and interpretivists, are guided by ontological and epistemological assumptions.

Ontology is the researcher's perspective on the present state of reality (Saunders, 2012). In this study, the views were selected in response to the research questions. Epistemology is concerned with the researcher's perspective on what constitutes valid knowledge (Saunders, 2012). This study makes use of contemporary literature on the subject.

2.3. Research strategy

For this study, a multiple-method case study design was utilized. Case study designs are selected based on three conditions, according to Yin (2018): i. when the primary research question is "how" and "why"; ii. whether the researcher has influence over the behavioural occurrences; and iii. the relevance of the event at the time the study is done. This study's research topic is "How can guidelines that promote core principles of IPP be integrated into the rehabilitation services at primary health care (PHC) level?" The researcher is unable to influence the behaviour of the study participants. However, given the present global movement

to an interprofessional model of health care, this study seeks to analyse contemporary events and provide possible solutions for the study participants. Consequently, a case study design is perfect for this study.

Case study research is an effective methodology to understand complex phenomena in a real-life setting (Harrison et al. 2017). The development of the case study research design is a compilation of researchers' contributions from diverse disciplines (Harrison et al., 2017). This facility was chosen for this study because it provides comprehensive PHC services to the population. Thus, enabling the researcher to benefit from a vast array of diverse disciplines when reporting on current PHC-level occurrences. As these contributing researchers have different philosophical underpinnings, there are numerous designs for the conducting of case study research (Harrison et al., 2017). Therefore, to ensure a sound case study design, a clear framework is required (Yin, 2018). In this study, the Logical Framework (logframe) Approach is a technique for analysing problems and their solutions to achieve a given objective (Mostafavi et al. 2020). In this study, a variety of techniques and procedures is employed to explore the challenges at a particular PHC facility and to identify the activities that can be implemented into the phases of the rehabilitation model to address the context-specific issues.

2.4. Techniques and procedures

Utilizing the two stages of the framework, the analysis and planning stages, the logframe method is implemented (Fujita, 2010). In the analysis stage, a situational analysis is performed (Couillard et al., 2009). In the planning phase, the logframe technique yields a product known as the logframe matrix (Fujita, 2010). In this investigation, the two stages were employed to define the methodology.

2.4.1. Analysis stage

A situational analysis is a type of formative research in which the researcher attempts to comprehend the numerous aspects that influence a system (Martin et al. 2016). Situational assessments are crucial to the successful implementation of health policies in public health research (Martin et al. 2016). In this study, the researcher sought to comprehend the PHC facility and how the incorporation of IPP can alter the facility's current practices. The analysis phase of this PHC facility consisted of three steps: Focus group discussions (FGDs), a

systematic review, and triangulation of data through a document analysis of the FGD transcripts and review summaries and the information was triangulated.

- **Focus group discussions**

A FGD is a qualitative technique in which small, structured groups are used to explore the perceptions of individuals regarding a particular topic through informal, yet focused discussions (Silverman, 2020). FGDs derive their strength from the "social" nature of humans because they encourage discussion (Colucci, 2007). In this study, the researcher uses FGDs to promote dialogue between health care providers at the chosen facility. Therefore, the researcher could acquire a contextual understanding of the facility as well as its processes.

(i) Study setting

The Community Health Centre (CHC) identified for this case study is equipped with a 24-hour trauma unit, 24-hour midwife obstetric unit, and clinic. The patients at this CHC have access to the complete PHC package. Thus, conducting a study at this facility ensured that the researcher had access to a range of healthcare professionals from various professions.

(ii) Population and sampling

According to Bhattacherjee, the sampling procedure comprised three steps (2012). In the first step, the researcher described the target population (Bhattacherjee, 2012). The target population for this study is the staff of the selected CHC. In step two of the sampling procedure, the researcher selected a portion of the study population that was easily accessible (Bhattacherjee, 2012). Excluding those employed in the trauma and midwifery-obstetric units, the study's population consists of all CHC clinic employees. Administrators, a team of family physicians, various levels of nursing staff, a radiography team, pharmacists and pharmacy assistants, and allied health professionals comprise the clinic staff, which provides PHC services to the community. The team of allied health professionals includes a physiotherapist, a dietician, a social worker, health care promoters, and a sessional occupational therapist.

The final step involved the selection of a sample using a defined sampling technique (Bhattacherjee, 2012), namely purposive sampling. This form of sampling allowed the researcher to select participants based on predetermined criteria (Etikan et al. 2016). Through typical case sampling, the researcher can determine the current standard or situation at the facility (Etikan et al. 2016). Therefore, the sample selection was defined as clinic staff who render services to patients seeking rehabilitative interventions. The researcher initially emailed

the clinic's rehabilitation manager the information sheet (Appendix A) and scheduled a meeting. The purpose of the study was communicated to the rehabilitation manager during the meeting, who then relayed it to then relayed it to the clinic staff who would be accessible on the day of the FGDs.

(iii) Data collection methods and tools

The FGDs were conducted at the CHC for the convenience of the participants. A self-developed interview guide for FGDs (Appendix B) guided the data collection process, through which the researcher learned about the perceptions, attitudes, and understanding of IPP among rehabilitation professionals. Prompts were only used to direct the researcher if the discussion got too quiet; otherwise, the participants led the discussion. What is your understanding of IPP? was the overarching question asked at the outset of each FGD. The following questions were asked: "What are your views on IPP at PHC level?" How do you think IPP can be implemented in your facility? The emphasis was placed on the participants' thoughts and understanding of IPP.

The researcher scheduled the FGDs according to participant availability. To ensure an accurate representation of the staff at the CHC, negotiations were conducted to accommodate all participants. At the beginning of the FGDs, each rehabilitation professional was asked to sign a consent form and a focus group confidentiality binding form (Appendix C) that emphasized the confidentiality of the focus group discussions. During the data collection process, participants were also asked to consent to the use of an audiotape recorder to record the sessions. Each FGD consisted of six to twelve participants and lasted approximately forty-five minutes. Literature indicates that smaller FGDs are more likely to be controlled by one or two participants, whereas larger groups may be subdivided into smaller discussion groups (Wong, 2008). There was a total of 32 participants in four FGDs. The researcher conducted the FGDs in English, with the researcher able to translate the discussion and text into Afrikaans, and the supervisor present solely to observe and provide isiXhosa translations when necessary.

(iv) Data analysis

Thematic analysis was employed to identify, examine, and report on themes within the collected data sets (Braun & Clarke, 2006). According to Braun and Clarke (2006), there are six steps for organizing and describing data in depth. The voice recordings were repeatedly played and then verbatim transcribed. The researcher read the transcripts multiple times, making marginal notes to highlight interesting codes. The researcher used a deductive method

of analysis to classify the concepts into subthemes to interpret the codes. This process was repeated for each transcript, and the common subthemes were subsequently grouped with the predetermined themes (understanding, perceptions, and attitudes). The goal of *understanding* was to assess participants' comprehension of the IPP concept. *Perception* aimed to ascertain participants' opinions about the implementation of IPP at their facility, which are based on their understanding of IPP. A participant's behaviour with relation to the implementation or enhancement of IPP at their facility is described by their *attitudes*. After that, the research supervisors confirmed this process until the ultimate subthemes were agreed upon.

(v) Trustworthiness

Following four procedures—credibility, dependability, confirmability, and transferability—ensured reliability (Houghton et al. 2013). Credibility ensures that research is conducted plausibly. Bias was removed and credibility was preserved through peer debriefing with the study supervisor and consulting a qualitative specialist for transcription coding.

Dependability and confirmability are the researcher's capacity to provide a detailed description of the data collection and analysis procedure (Houghton et al., 2013). In this study, dependability and confirmability were ensured by using relevant literature to support decisions made during data collection and analysis. Transferability was ensured by providing a thorough description of the study's research methods, which allowed the reader to determine the applicability of the findings to other contexts (Houghton et al., 2013). To provide context for the study, the research setting, population, and sampling procedure were described in detail.

- **Systematic review**

Systematic reviews are utilized to synthesize extensive literature collections (Mulrow, 1994). In health policy research, systematic reviews are employed to create guidelines and legislation (Mulrow, 1994). In configurative reviews, data is organised to answer a review question (Gough et al. 2012). To develop IPP guidelines suitable for the PHC context, a systematic review of the activities that promote IPP at the PHC level was necessary. Therefore, a configurative review was ideal as the studies included in the review would be configurated to answer the research question. This study's systematic review adhered to the eight stages of a systematic review (Uman, 2011).

i. Research question

The first stage of the review was to develop the research question, using the population, exposure, and outcome. The population (P) was the health professionals, who formed a part of

the workforce at PHC level, the exposure (E) was the activities that promoted IPP at PHC level, and the outcome (O) was the effective IPP, executed in practice (Maia & Antonio, 2012). Using the PEO method, therefore, the question of the review was, "What are the activities used to promote IPP at PHC level?"

ii. Inclusion and exclusion criteria

The second stage involved the setting of the study search criteria. Inclusion and exclusion criteria typically include one, or more, of the following: study population; nature of the intervention; outcome variables; time-period; cultural and linguistic range; and methodological quality (Meline, 2006). The studies that were included in the systematic review had to meet the following five criteria:

a) They had to be published between 2008 and 2021.
b) Their data analysis strategies had to be quantitative, qualitative, or mixed methods.
c) They had to be published in the English language.
d) The study setting had to be a primary healthcare facility.
e) The full text had to be accessible to the researcher.

To include the most recent studies on a particular phenomenon (Meline, 2006), the researcher selected a 13-year time frame. Excluded from the study were studies that were conducted outside of the 2008-to-2021-time frame. Studies that did not take place in a PHC facility were excluded to guarantee that activities were appropriate for the level of healthcare. Additionally, studies were excluded if neither the researcher nor the faculty librarian could obtain the full text.

iii. Search strategy

A comprehensive list of key terms, related to the components of the PEO, allowed the researcher to identify relevant literature in the area, enabling extensive searches of relevant databases (Uman, 2011). In this study, the databases included Cumulative Index to Nursing and Allied Health (CINAHL), Medline, PubMed, Elsevier, Excerpta Medica Database (EMBASE), African Journals Online, and SAGE, for the period of 2008 to 2021. The Boolean search string was healthcare professionals [*population*] AND interprofessional activities [*exposure*] AND interprofessional education OR collaborative practice OR multidisciplinary teamwork OR interprofessional practice OR interprofessional learning [*outcome*] AND

primary healthcare [*outcome*].

iv. Study selection

In this phase of the research, an exhaustive list of abstracts that appeared to meet the inclusion criteria was retrieved in their entirety (Uman, 2011). Uman (2011) recommends that at least two researchers complete this phase of the review to ensure its credibility. Therefore, the researcher sought assistance from the study supervisor.

v. Data extraction

It could be helpful to create and use a simple data extraction form, or table to organise the information extracted from each reviewed study. During this stage of the review, information from the studies were extracted with the aid of a data extraction table (Uman, 2011). In this study, data were extracted according to the RE-AIM framework. In clinical practice, the RE-AIM framework assists in addressing implementation challenges by expanding the reach and delivery of interventions, and reducing health disparities (Glasgow et al., 2013). The RE-AIM framework comprises five dimensions, which were expanded upon, and tabulated as follows: *Reach* (inclusion/exclusion criteria, representativeness), *Effectiveness* (intended outcome, outcome of activity), *Adoption* (setting), *Implementation* (duration and frequency of activity), and *Maintenance* (long-term effects, indicators for follow up).

vi. Study quality

During this stage of the review, the methodological quality of the studies/articles was assessed (Uman, 2011), using an instrument (Appendix D) adapted from the five dimensions of the RE-AIM framework (Glasgow et al., 2019). The *Reach* dimension assesses the representatives, participation rate, and inclusion and exclusion criteria of the target population. The *Effectiveness* dimension includes the intended outcome of the activity, the limitations of the activity, as well as the outcomes and attrition rate of the participants. The *Adoption* dimension evaluates the setting, how the activity was adopted into the setting, as well as who delivered the activity. *Implementation* includes the resources and reliability of the activity. The *Maintenance* dimension determines the long-term impact of the activity, and the indicators used for follow-up (Harden et al., 2015). The adaptation of this RE-AIM framework enabled the researcher to allocate a score out of a 100 for each included article.

vii. Result analysis and interpretation

This phase consisted of a qualitative synthesis of the findings (Uman, 2011). When substantial

heterogeneity exists, studies can be combined (Uman, 2011). Two independent reviewers analysed the selected articles to provide the researcher with IPP-promoting activities at the PHC level. The results were analysed and interpreted by investigating how the activities that promoted IPP at the PHC level can be replicated in developing countries.

viii. Dissemination of results

A summary of the results could be published in online journals (Uman, 2011). An abbreviated version of the systematic review in this study was written and submitted to appropriate academic journals.

- **Triangulation of data**

In the final step of the analysis stage of the logframe approach, the researcher triangulated the data collected in the two preceding steps. A document analysis is a systematic methodology to review and evaluate documents (Bowen, 2009). In this phase, two document sets were analysed, namely, the transcripts from the focus group discussions (FGD) and the systematic review report. The documents were analysed deductively, using the steps of the analysis stage, namely, problem analysis, objective analysis, and strategy analysis (Fujita, 2010). As this study was based on a previously developed rehabilitation model (Mlenzana and Frantz, 2017), the phases of that model represent the objectives of this objective analysis.

(i) Objective analysis

In addition to the objectives, the rehabilitation model provides the means of achieving the utopia. The 'Means-to-End' diagram displays the objective in the top tier, as the utopia, and the lower tier, as the means of achieving the utopia (Figure 2.1). To ensure that the objectives, described in the rehabilitation model, are appropriate to address the current challenges at the selected CHC, a problem analysis needed to be conducted.

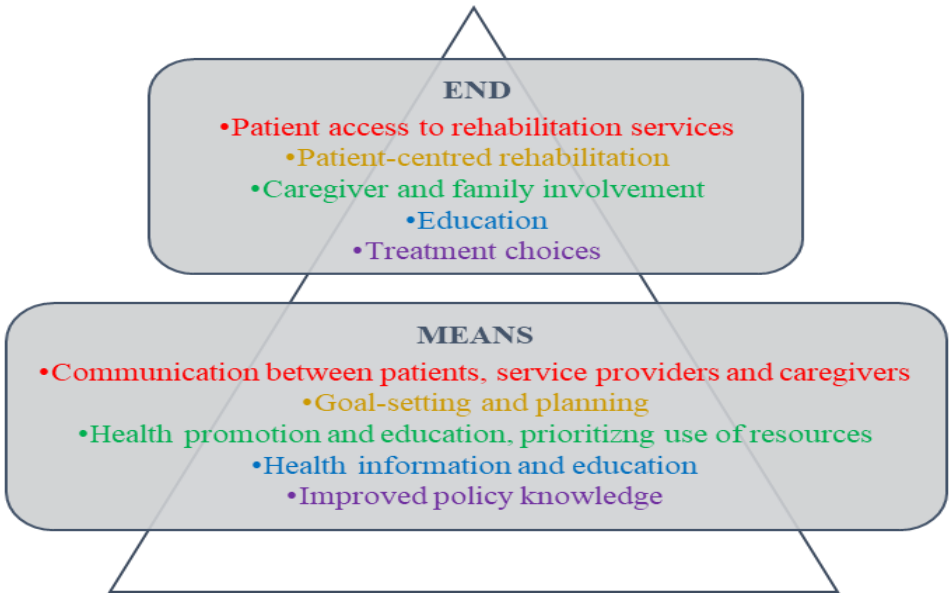

Figure 2.1: Objective analysis

(ii) Problem analysis

Traditionally, problems are rephrased as objectives in objective analysis (Jackson, 1997). In this study, as objectives are provided in the rehabilitation model, objectives are rewritten as problems. The problem analysis evaluates the principal challenges that will be addressed by the intervention (Jackson, 1997). To determine the problems at the CHC, the focus group transcripts were deductively analysed into the five rephrased objectives of the rehabilitation model.

(iii) Strategy analysis

The rehabilitation model provides the means to achieve the objectives to effectively address the problems. The output of an intervention can be considered the means to achieving the objectives. The output is the expected deliverable result that considers the change in attitude, belief, and behavior in response to an intervention (Couillard et al., 2009). As the known information was plotted into the analysis phase of the logframe in this study, it became evident that the rehabilitation model failed to address certain aspects. The rehabilitation model failed to address the strategies required to ensure the acquisition of the necessary skills and knowledge to achieve the desired outcome. Therefore, integrating the activities into the various

phases of the rehabilitation model was essential. The document analysis of the systematic review was a part of the strategy analysis. The systematic review was deductively analysed into the rehabilitation model's phases.

2.4.2. Planning stage

Following the analysis phase is the planning phase, which contains the logframe matrix as the result of the logframe approach. The logframe matrix is a summary of the intervention's key components (Fujita, 2010). The logframe matrix is developed by completing a table that integrates the vertical logic and horizontal logic (Fujita, 2010). The vertical logic suggests that interventions require a great deal of resources to achieve a certain predetermined outcome (Goeschel et al. 2012). The horizontal logic focuses on each objective's logframe (Goeschel et al., 2012). As the data gathered in the first stage is categorized into vertical and horizontal logics, it becomes apparent that there are data gaps (table 2.1).

Table 2.1. the logical framework matrix

INPUT	ACTIVITIES	OUTCOMES	KEY ASSUMPTIONS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	OBJECTIVE
Focus group discussions Systematic review	Systematic review	Systematic review				Rehabilitation model

The *key assumptions*, *objectively verifiable indicators,* and *means of verification* is still needed to complete the logframe matrix. The assumptions are what is needed to achieve the activity (Goeschel et al. 2012). The indicators are the signs that the vertical logic is being achieved through each objective. Finally, the means of verification prove that the activity has been conducted. To obtain this information, a Delphi study is employed.

The logframe matrix is incomplete without the *key assumptions*, *objectively verifiable indicators*, and *verification methods*. The assumptions are what developers of the matrix believe are necessary to complete the activity (Goeschel et al. 2012). The indicators are the indications that each objective is achieving the vertical logic (Goeschel et al. 2012). Lastly,

the means of verification demonstrate that the activity was carried out (Goeschel et al. 2012). In this study, a Delphi study is utilized to acquire this missing information.

- **Delphi study**

A Delphi study is an accepted technique, used to gain the input of experts within a specified area (Hsu & Sandford, 2007). In theory, a Delphi study could be conducted until consensus is reached. In this study, the purpose of the Delphi was to develop and reach consensus among experts, regarding the implementation of activities that promote IPP in the rehabilitation sector at PHC level.

- *Key assumptions*

The first round of a Delphi study consists of a series of open-ended questions designed to elicit information regarding a particular topic (Hsu & Sandford, 2007). In the initial round of this Delphi study, experts were asked what was required to implement rehabilitation activities at the PHC level. The researcher develops a questionnaire of summarized items from the first round of the Delphi study based on the responses of the participants. In the second round of the Delphi study, participants are asked for additional feedback on the questionnaire items (Hsu & Sandford, 2007).

- *Objectively verifiable indicators*

In this study, it was proposed that IPP be used to ensure that the population receives quality rehabilitation services. Therefore, it is necessary to align the items generated in the key assumptions step with the Interprofessional Education Collaborative's (IPEC) proposed sub-competencies (2016). When the items are aligned, they can be viewed as guidelines for IPP in the rehabilitation sector of PHC.

- *Means of verification*

The sub-competencies correspond to one of the four IPE core competencies (IPEC, 2016). If the health service providers exhibit the skills, knowledge, and values outlined by these IPE core competencies, this demonstrates that the guidelines and, consequently, the activity were effectively implemented into the rehabilitation services.

(i) Population and sampling

The most important aspect of conducting a Delphi study is selecting the proper participants based on their knowledge and expertise of a particular phenomenon (Hsu & Sandford, 2007). Participants are chosen based on their experience and background in relation to the topic, but

there are no other specific requirements (Hsu & Sandford, 2007). Non-probability sampling was utilized to select the Delphi study participants. In non-probability sampling, participants are not chosen at random, but instead for a specific reason (Hasson et al 2000). The selection criteria for this study were as follows: i) knowledge of the topic; ii) involvement in the full Delphi process; and iii) commitment to the process. As a result, the researcher selected participants who were well-versed in PHC, rehabilitation, interprofessional education, and collaborative practice, as well as committed to participating in all rounds of the Delphi study. An information sheet (Appendix E) explaining the participants' expectations and involvement in the Delphi study was distributed to the participants.

(ii) Research design

The research design belongs to the category of consensus development techniques, which are applicable to studies with limited evidence (Avella, 2016). In research in which consensus is reached on a particular topic, consensus development techniques are employed (Avella, 2016). As it may be difficult to achieve 100 percent consensus among all participants, a Delphi consensus of 70% is regarded as the norm (Avella, 2016). The rounds are continued until consensus is reached. According to literature, the overarching question here is, “How to empower, learn, and improvise?” (Cooperrider & Godwin, 2011).

(iii) Data collection methods and tools

The participants completed consent forms (Appendix F), confirming their decision to participate in the Delphi process. A link to a Google Form was sent to them to complete the online open-ended questions (Appendix G). The answers from the Google form were downloaded for analysis, and the researcher grouped the responses as items under the respective activities. The items from the first round of Delphi were used to develop a Likert scale questionnaire on Google Forms (Appendix H). The responses from the second round were downloaded in order to determine whether there was a consensus regarding the items deemed necessary for the successful implementation of activities at the PHC facility.

(iv) Data collection procedure

The questionnaire for the first round was created using the phases of the rehabilitation model, which included the activities at each phase of the model at each phase, as determined in the analysis phase. Participants were asked how these activities could be integrated into the rehabilitation sector of a PHC setting. Based on participant feedback, items were developed for each phase of the rehabilitation model's activities. Because of the modifications, a 5-point

Likert scale was developed to evaluate the feasibility of the item for the rehabilitation sector at the PHC level, the successful implementation of the activity, and the implementation of the respective phases of the rehabilitation model.

(v) Data analysis

The researcher needed to identify an appropriate method for analysing qualitative data (Hsu & Sandford, 2007). In the initial round of the Delphi study, the data were downloaded from Google Form. The researcher read the responses of each participant individually and made notes in the margins. The researcher employed a method of analysis to classify the notes into sub-themes. The subthemes were categorised and deductively placed into the rehabilitation model's phases' activities. This was done for every participant's response. In the second round, qualitative analysis was performed on the data collected using a 5-point Likert scale ranging from strongly agree to strongly disagree. When 70% of the participants agreed/disagreed, or when a median score of 3.24 was reached for each item under the activities at each phase of the rehabilitation model, consensus was achieved.

2.5. Ethics considerations

Ethics approval (Appendix I) was obtained from the University of the Western Cape Biomedical Research Ethics Committee (Ethics number – BM19/1/38). The Western Cape Department of Health, and the management, as well as the participants at the CHC.

2.6. Conclusion

In this chapter, the researcher describes the methodology employed in this research study, which utilised a multi-method case study research design. The logframe approach was the appropriate framework for achieving the study's aim, which was to develop guidelines that could be used to incorporate the core principles of IPP into rehabilitation services at a PHC facility. This study was conducted in accordance with the two phases of the logframe methodology: the analysis stage [FGDs, systematic review, and data triangulation] and the planning stage [Delphi study] (Figure 2.2).

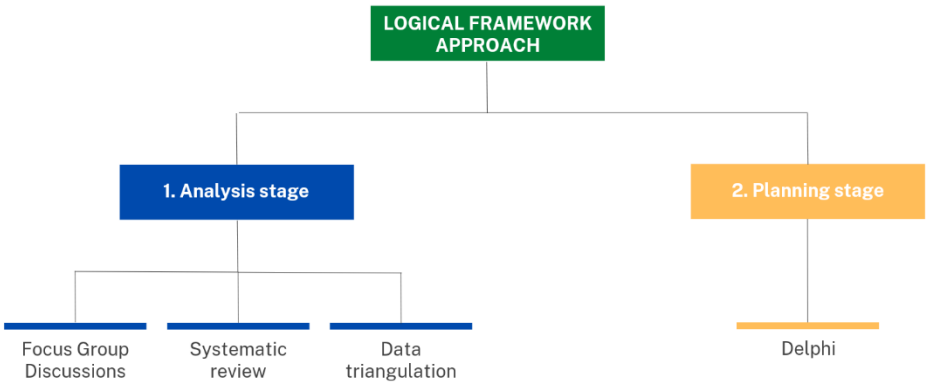

Figure 2.2. Phases of this study

2.6. References

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CHAPTER THREE

STAGE 1: PHASE 1: THE PERCEPTIONS, ATTITUDES AND UNDERSTANDING OF HEALTH SERVICE PROVIDERS FOR INTERPROFESSIONAL PRACTICE AT A SELECTED PRIMARY HEALTH CARE FACILITY

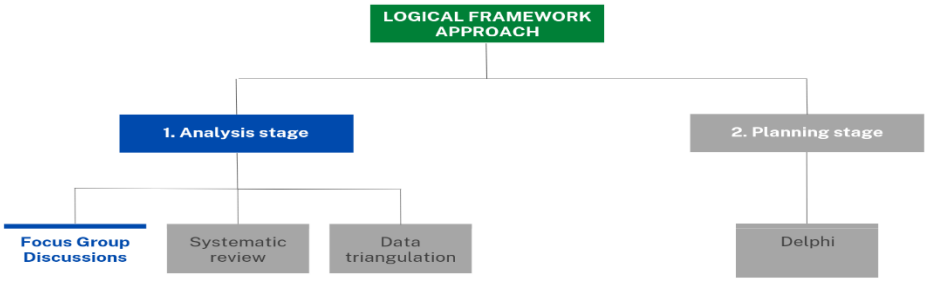

Figure 3.1: Phase 1 of the Logical Framework Approach: Focus group discussions

3.1. Introduction

In this chapter, the researcher describes the initial qualitative step of the Analysis Stage of the Logical Framework (logframe) Approach. To determine the suitability of the selected primary health care (PHC) facility for interprofessional practice (IPP), this chapter sought to ascertain the perceptions, attitudes, and understanding of health professionals regarding IPP at a selected PHC facility. This information could inform the development of an appropriate interprofessional intervention at a particular PHC facility (Article 1).

3.2. Publication details

Article 1 has been published in the African Journal of PHC and Family Medicine, and details about the publication can be observed in Table 3.1.

Table 3.1: Article details

Title	**Perceptions, attitudes and understanding of health professionals of interprofessional practice at a selected community health centre**
Authors	Kock, L., Mlenzana, N. B., Frantz, J. M.
Year	2021
Journal	African Journal of Primary Health Care and Family Medicine
Volume	13
Issue	1
Page no.	(Online) 2071-2936
Status	Published
Full citation	Kock, L., Mlenzana, N., & Frantz, J. (2021). Perceptions, attitudes and understanding of health professionals of interprofessional practice at a selected community health centre. *African Journal of Primary Health Care & Family Medicine, 13*(1), 6 pages. https://doi.org/10.4102/phcfm.v13i1. 2724

3.3. Journal overview

The manuscript was published in the Journal of PHC and Family Medicine (PHCFM). This peer-reviewed journal, with an international editorial board, is operated under the banner of Aosis Publishing house. The journal provides a platform for information sharing between health professionals across Africa, offering readers a contextual view of how PHC is practiced in the different countries of the continent. The PHCFM is ideal for this article because it provides the reader with insight into the contextual barriers to IPP, and the current healthcare practices at a PHC facility in South Africa.

3.4. Published article

Perceptions, attitudes, and understanding of health professionals of interprofessional practice at a selected community health centre

Authors: Kock, L., Mlenzana, NB., Frantz, JM.

3.5. Abstract

Background: Despite being identified as a solution to the challenges related to healthcare service delivery, the incorporation of interprofessional practice into clinical practice has been limited. To implement an interprofessional model of healthcare, successfully, health professionals need to have an understanding of interprofessional practice and its related content.

Aim: The aim of this study was to explore and describe the health professionals' perceptions, attitudes, and understanding of interprofessional practice at a selected community health centre.

Setting: This study was conducted at a primary health care facility in the Western Cape, South Africa.

Methods: Ethical clearance and permission to conduct the study was obtained from all relevant stakeholders. Four focus group discussions were conducted with health professionals at the facility. Themes, codes, and categories were highlighted from the transcripts of the audiotape-recorded data.

Findings: The findings suggest that health professionals do not have an understanding of interprofessional practice, and therefore, are unable to apply it practically. The health professionals perceived certain healthcare processes in the facility as barriers to the integration of practices. In addition, the health professionals expressed that interprofessional relationships, creation of opportunities for IPP, and communication, were facilitators to transform the current practice.

Conclusion: To implement interprofessional practice into this facility, effectively, the authors of this study recommend that facility management implement campaigns for, and training on, the transition to interprofessional practice, staff induction programmes, and regular meetings.

Keywords: Primary health care, interprofessional practice

3.6. Introduction

A primary health care (PHC) workforce requires a wide range of experts from various sectors to work together, to respond to population health needs (World Health Organization [WHO] and the United Nations Children's Fund [UNICEF], 2018). IPP has been identified as a means to improve patient experience, improve population health outcomes, decrease healthcare cost, and improve the work experience of health professionals (D'Amour & Oandasan, 2005). As a result, there has been a global shift to an interprofessional model of healthcare. To ensure preparedness for IPP, adequate in-service training is required for health professionals (WHO & UNICEF, 2018). Therefore, the incorporation of IPP into clinical practice requires the creation of opportunities, where health professionals could develop skills and knowledge for effective collaboration.

Interprofessional education (IPE) has been defined as a learning approach, which allows professionals to learn with, from, and about each other, to improve collaboration. In addition, the WHO highlighted that IPE in health improved patient outcomes (Health Professions Network Nursing and Midwifery Office within the Department of Human Resources for Health, 2010). Within this learning approach, the skills, knowledge, and values required to collaborate with other health professionals in practice, are developed and enhanced (Filies, Yassin, & Frantz, 2016). Various strategies are used to implement IPE, as well as IPP, and focus on one, or more of the interprofessional core competencies. Interprofessional core competencies are the enactment of knowledge, skills, and attitude, required, to collaborate effectively (Buring et al., 2009). IPP and IPE, therefore, are interdependent to ensure the delivery of improved health services to the population (D'Amour & Oandasan, 2005).

However, various barriers to the successful adoption of the IPP approach to healthcare have been identified, which include, time constraints, poor financial support, relationship building, communication, health professional *vs* patient responsibility, and patient-centred *vs* disease-focused models of care (Supper, Catala, Lustman, Chemla, Bourgueil, & Letrilliart, 2014). In addition, South Africa is faced with staff shortages at PHC level in the public health care sector (Mlenzana, Frantz, Rhoda, & Eide, 2013). PHC facilities often have only one representative

per discipline, which is often an employee, who services more than one facility; however, one representative per discipline could be used to start an interprofessional approach.

Barriers, though, should not be viewed as resistance; instead, it could be used as a guide to the incorporation of healthcare models into the health service delivery (Uhlig et al. 2018). In order to develop appropriate strategies, it is imperative to understand how health professionals perceive the implementation of IPP. In a study conducted by Bierwas, Rogers, Taubman, Kroneberger, and Carroll (2017) the participants displayed a positive attitude towards interprofessional learning; however, the execution into practice remained limited. The reported reason for the poor integration into practice includes the limited or no understanding of IPP, IPE, as well as the IPE core competencies (Bierwas et al. 2017). The development and delivery of IPE is shaped by various mechanisms, including staff training, managerial support, logistics and scheduling, as well as programme content (Health Professions Network Nursing and Midwifery Office within the Department of Human Resources for Health, 2010). When the local context is considered in the development of the IPE programme, the areas that require support could be highlighted. Similarly, structured protocols, communication strategies, shared decision-making processes, and the facility environment, influences the way IPP could be introduced and executed (Health Professions Network Nursing and Midwifery Office within the Department of Human Resources for Health, 2010). To develop an appropriate IPE/IPP programme at a health facility, the context of the facility needs to be understood. In order to make appropriate recommendations for the successful implementation of IPP at a healthcare facility, it is important to highlight the areas of support that facility staff may require. The aim of this study, therefore, was to explore and describe health professionals' perceptions, attitudes, and understanding of IPP, at a PHC facility.

3.7. Methods

3.7.1. Study design

The researchers employed an exploratory, descriptive, qualitative case study design, with focus group discussions (FGD) to explore and describe the perceptions, understanding, and attitudes of health professionals, regarding IPP (Kemparaj & Chavan, 2013).

3.7.2. Setting

This study was conducted across different departments, within one facility at PHC level. The facility is a community health care (CHC) centre that operates in the Nyanga health district of the Metropole Region, Western Cape, South Africa. The Nyanga health district is one of 11 sub-districts of the Metropole region. This CHC serves an urban population that gains access to the facility through internal, external, or self-referrals. The CHC consists of a 24-hour trauma unit, 24-hour midwife obstetric unit, and a clinic. The clinic delivers the full PHC package to the population, and consists of administrators, a team of family physicians, various levels of nursing staff, a radiography team, pharmacists and pharmacy assistants, as well as allied health professionals. The allied health professional team comprises a physiotherapist, a dietician, a social worker, health care promoters, and a sessional occupational therapist.

3.7.3. Study population

The target population for this study included all health professionals and administrative staff members, who interacted with patients, requiring health services. The researchers explained the purpose of the study to the rehabilitation manager, who subsequently disseminated the information to the various departments, for individuals to volunteer as participants. The sample consisted of 33 individuals, who offered their informed, signed consent to participate in the FGDs.

3.7.4. Data collection

The data collection method encompassed four FGDs, conducted with the health professionals and administrative staff. Each FGD involved four to 10 participants, depending on the availability of the staff members. Before each FGD was conducted, the participants had to declare confidentiality of information shared in the group, were assured of anonymity when reporting, and informed of their right to withdraw from the study at any time, without prejudice. Permission to audiotape-record the FGDs was obtained from all the participants. A semi-structured interview schedule, consisting of open-ended questions, was used to explore the perceptions, attitudes, and understanding of health professionals, regarding IPP. The broad question used at the start of each FGD was, “What is your understanding of IPP?” The following prompts were used, “What are your views of IPP at PHC level?” and “How do you think IPP can be implemented at your facility?”

The FGDs were conducted in a private area at the CHC, and each FGD lasted between 30 to 60 minutes. All the interviews were conducted in English, as the participants were fluent in the

language. The recorded FGDs were transcribed verbatim. To ensure dependability, two researchers coded the transcripts. To record contextual impressions and insights, notes were taken throughout the process. Member checking, by debriefing with the participants after the FGD, was performed to ensure credibility and trustworthiness.

3.7.5. Data analysis

Using the 6-step thematic analysis of Braun and Clarke (2006), the researchers analysed the transcribed voice recordings. Each transcript was read individually by two researchers, and notes were made in the margins, to highlight interesting codes. The researchers followed a deductive method of analysis, for categorisation into sub-themes. Sub-themes from all the transcripts were grouped into themes. All sub-themes were supported by quotes from the FGDs.

3.7.6. Ethics considerations

Ethics approval was obtained from the University of the Western Cape Biomedical Research Ethics Committee (Ethics number – BM19/1/38), The Western Cape Department of Health, and the management, as well as the participants at the CHC.

3.8. Findings

3.8.1. Characteristics of the participants

The study sample comprised 33 participants, from various departments at one CHC. Table 3.2 contains the gender, years of experience in the public health sector, and the profession of the participants.

Table 3.2.: Characteristics of the participants

Characteristic	Category	Number
Gender	Male	9
	Female	24
Years of experience	0 – 10 years	22
	11 – 20 years	7
	Longer than 20 years	4
Profession	Physician	6
	Physiotherapist	1
	Administrative clerk	5

	Nurse	17
	Pharmacist	2
	Radiographer	1
	Social worker	1

3.8.2. Main findings

The findings describe the perceptions, attitudes, and understanding of health professionals regarding IPP. The sub themes and categories are presented in Table 3.3. Quotes to support these sub-themes are presented below.

Table 3.3: Perceptions, attitudes and understanding of health professionals regarding IPP at PHC level

Themes	Sub-themes	Categories
Understanding	Defining IPP	Relationships
		Referrals
Perceptions	Current processes	Case dependent
	Barriers	Hierarchy
		Logistical challenges
		Infrastructural barriers
		Time constraints
		Administration
Attitudes	Resistance	Lack of patient follow up
		No change in outcome
		Setting
	Implementation	Relationship
		Communication
		Opportunity

Defining interprofessional practice

The health professionals defined IPP as a professional relationship between colleagues, as the following extracts reveal:

"A doctor and a nurse working on, on a patient together and then the patient maybe will go for an X-ray." **(FGD1, P5)**

"…the working together of the different professions who have roles and expectations." **(FGD4, P5)**

"…where you work within …with your colleagues." **(FGD1, P5)**

It was evident that the participants were unable to provide a definition for IPP. Health professionals, consequently, failed to apply IPP in practice. Referrals to another health professional, without interprofessional interaction, could mistakenly be construed as IPP, as per the following extracts:

"We basically refer to Physio or Social Worker for social issues." **(FGD3, P4)**

"It's easier to, to refer because I mean, it's just submitting work over." **(FGD2, P1)**

"…if we refer for relevant staff." **(FGD3, P4)**

Current IPP processes

At this facility, the processes deemed as IPP involved referrals between staff, and health professionals making decisions in their silos. The lack of understanding may reflect what the participants were observing currently at their facility. When asked about their perceptions of the current IPP process at their facility, the participants expressed that there were ongoing attempts to integrate practices. The following extracts refer:

"Actually, we work together with the doctors." **(FGD1, P5)**

"We do work like this sometimes. It depends to that case." **(FGD1, P1)**

"…as a team, doctor, nurse, or all those that are there…you have a discuss about the patient." **(FGD2, P2)**

Barriers

When asked what they perceived to be the reasons for the lack of interprofessional interaction, the participants identified various barriers. Their reasons related to hierarchy and logistical arrangements, as the following extracts indicate:

"Hierarchy is sometimes okay, and I'm a doctor, I'm a nurse, I'm a clerk, I'm a cleaner." **(FGD4, P1)**

"You don't know when, when is the physio in the office." **(FGD1, P2)**

"I'm not gonna walk to physio and explain my situation, and rush back." **(FGD3, P3)**

Some participants expressed time barriers and administration, as major hindrances to the successful implementation of IPP at their facility, as the following extracts indicate:

"I don't think it can't be done. I think it's about the time being set aside for it." **(FGD4, P4)**

"…time constraints . I have 6 minutes with a patient." **(FGD3, P3)**

"Everyone has different times …you're off on Wednesdays, he's off on Fridays." **(FGD3, P5)**

Resistance

Based on their view of IPP, the participants expressed a negative attitude towards the implementation of IPP in the current healthcare processes at their facility. The main reason for this attitude is the high volume of patients and incomplete patient information systems, as the health professionals are unable to conduct regular patient follow-up. The following extracts refer:

"I think it's kind of difficult to do here, because you see a patient once." **(FGD3, P2)**

"And you'd rather have the patient coming back sooner, than they should." **(FGD3, P3)**

"…if we can actually have working phones and working numbers for these patients…you check your results for half an hour for all the patients. If it's abnormal, you call the patient…" **(FGD3, P4)**

When probed about the implementation of IPP at their facility, the participants highlighted the challenges of working in a PHC setting, when compared to levels of care:

"I think it mostly happens in big hospitals departments…sit down with a patient and discuss the patient, but in such clinics as [this one], it gets referred..." **(FGD3, P2)**

"…this is not a hospital, you can't do that." **(FGD3, P4)**

"Because, keep in mind that Primary Health Care at the end, especially O.P.D, there is a certain target they must reach." **(FGD1, P1)**

Participants expressed that the challenges faced in PHC, result in no change in outcomes in practice, as the following extracts highlight:

"We've got so much pressure on us that this doesn't go to my head…that there is no point." **(FGD 3, P1)**

"A representative for every department, every unit would be there to be able to meet…But that, with the change of management, it fell off." **(FGD2, P1)**

"You've got all the best policies, but somebody needs to apply them." **(FGD4, P1)**

Implementation

When probed on what would be required to implement IPP, successfully, the health professionals expressed the need for relationships, communication, and opportunity for IPP. The participants highlighted the need to have interprofessional and interdepartmental relationships, as the following extracts imply:

"…to introduce the other staff from the other departments on the Nurses day." **(FGD1, P3)**

"I actually spoke to the trauma manager. I said, 'you did not orientate them there. You did not introduce them at X-rays' " **(FGD2, P5)**

"Team-building sessions…I think we need to…" **(FGD4, P1)**

In order to implement IPP, the participants expressed the need for time to participate in opportunities for IPP. However, at least one participant explained that the current referral process was more time consuming. The following extracts inform:

"But we don't have that time to sit…" **(FGD2, P6)**

"Maybe I don't even have to go through a lengthy process of filling in a referral form and all that. You can give in everything you have discussed with this patient, I mean it's easier." **(FGD2, P1)**

The participants highlighted the importance of creating platforms that promote communication. One participant expressed that interdepartmental communication was compromised, due to faulty telephones at this facility. The following extracts refer:

"Pharmacy all the time you find that there is that, that thing that disturbs the telephone you can't phone, you can't phone from us." **(FGD1, P1)**

"…we can have multidisciplinary team meetings." **(FGD2, P4)**

"So, when we sit and discuss these things, they will understand my mind, I will understand their mind, but it does not happen." **(FGD2, P2)**

3.9. Discussion

Based on the findings, the current situation at the facility and the recommendations to ensure successful implementation of IPP are discussed.

3.9.1. The current situation

It is apparent from the data that the participants at this facility adopt a multidisciplinary approach to patient management and believe it to be the same as IPP. In a multidisciplinary team approach, health professionals work in parallel, with clear roles and predetermined tasks (Körner, 2010). However, Körner (2010) continues to explain that a multidisciplinary approach encourages hierarchical lines of authority, and hierarchy is considered a barrier to effective teamwork between various professionals (Wong, Combellick, Wispelwey, Squires, & Gang, 2017). The presence of hierarchical systems creates controlled lines of communication, which delays decision-making (Wong et al., 2017). At PHC level, the healthcare process of a patient

relies on referrals, mainly from physicians and professional nurses, to allied health professionals. This referral system encourages instruction, as opposed to collaboration. At this PHC facility, the hierarchical system is sustained through the referral process, as the physician makes referrals, without communication or interaction with other health professionals. In order to combat the current hierarchies at this facility, hierarchical systems, such as referrals without interprofessional interaction, need to be reconsidered. Therefore, it is noted that interprofessional interactions among staff members at this facility is required.

However, the current logistical and infrastructural situation of this facility does not allow for interprofessional interaction. One participant expressed the inconvenience of referring the patient to a professional in another department. Other participants highlighted faulty telephone lines as a reason for the decreased staff interaction. Often, the departments in PHC facilities are spaced too far apart, making it time consuming to communicate with professionals from other departments, without functional communication technology. Another barrier to the successful implementation of IPP that was highlighted by the participants was time constraints (Supper et al., 2014). It is important to note that sufficient time is required to ensure effective communication, as well as overcome prejudices between health professionals (Supper et al., 2014).

3.9.2. Recommendations for the successful implementation of IPP

IPP could be used to improve the work environment of health professionals (D'Amour & Oandasan, 2005). Therefore, it should be noted that the participants highlighted the need for an interprofessional relationship, opportunities for IPP, and communication. Recommendations for the successful implementation include IPP opportunities that, most likely, will result in an improved interprofessional relationship and communication. Staff induction programmes reduce ambiguity, results in role clarity, and facilitates the ability of new staff members to comprehend the process of their new environment (Antonacopoulou & Gu, 2010). The implementation of staff induction programmes could be used effectively to develop, or enhance, the role clarification competency needed for effective collaboration (Buring et al., 2009). Role clarification is the ability of individuals to describe their own role, as well as the role of other health professionals (Commonwealth of Australia, Queensland Government, 2019).

The staff expressed the need for opportunities for IPP; however, given the lack of staff interaction, when one staff member is away on leave, it is unlikely that staff in other

departments would be aware of it. As IPP depends on the presence of various professional staff, it is important to create platforms for open discussions. During these opportunities, staff could indicate when they would be, on annual or sick leave, working and break times, or attending to organisational responsibilities. To ensure the representation of various professionals in IPP interventions, facility management should ensure the development of regular interaction between departments.

Improving communication is essential in the transformation to high quality care (Clarke et al., 2013). Improving communication is perceived as an essential area for team training (Müller, Plewnia, Becker, Rundel, Zimmermann, and Körner, 2015). Opportunities to encourage interprofessional communication need to be created. To ensure that interprofessional interaction does not result in a negative impact on service delivery, these opportunities need to be efficient and have pre-determined time limits. By incorporating short, regular interprofessional meetings into the practice at PHC level, health professionals could discuss interventions that the patient received, prior to referrals (Andvig, Syse, & Severinsson, 2014). Regular meetings are required to develop and improve collaboration, which subsequently, may lead to improved flexible interaction between various health professionals, and encourage communication and contact (Andvig et al., 2014). In addition, regular meetings may encourage discussions on team expectations (Andvig et al., 2014).

Strengths and limitations

The findings of this study cannot be generalised for all health professionals, who render services at PHC level. The findings, however, could assist in gaining insight to the experiences of health professionals at PHC level, in the Cape Metropole of South Africa. The time constraints of the FGD affected the depth of analysis of this study. However, the members were able to debrief with the participants after each session.

Implications of study

By creating staff training opportunities to promote interprofessional relationships and interprofessional communication, staff could develop a positive attitude towards the transition to an interprofessional model of care.

3.10. Conclusion

From the findings of this study, it could be concluded that health professionals at this facility did not have an understanding of IPP, and consequently, were unaware about practicing interprofessionally. To ensure the integration of care, the authors of this study recommend that facility management host an awareness campaign on the transition from referral to collaboration. Should the management intend to implement IPP effectively into this PHC facility, the implementation of staff induction programmes and regular interprofessional meetings is recommended.

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3.12. Summary

In this chapter, the researcher gained insight into the perceptions, comprehension, and attitudes of selected PHC professionals regarding IPP. It was evident that health professionals were unable to define IPP and, as a result, were not implementing its principles in practice. When planning an interprofessional intervention, it is essential to consider the contextual barriers of facilities, given the global shift toward an interprofessional model of health. The next chapter thus explores the activities that could promote IPP at the PHC level through a systematic review.

CHAPTER FOUR

STAGE 1: PHASE 2: THE ACTIVITIES NEEDED TO PROMOTE INTERPROFESSIONAL PRACTICE AT PRIMARY HEALTH CARE LEVEL

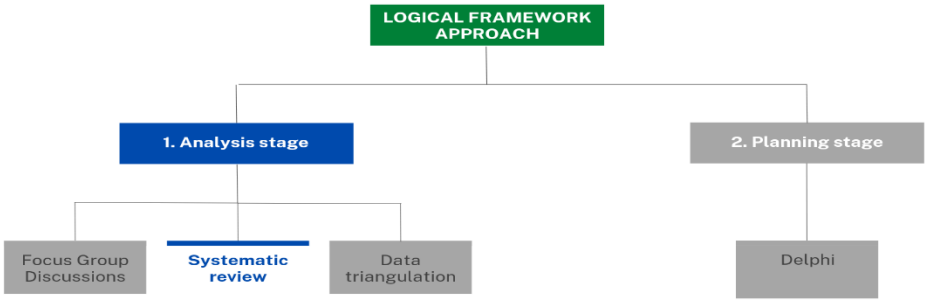

Figure 4.1: Phase 2 of the Logical Framework Approach: A systematic review

4.1. Introduction

In this chapter, a systematic review allows the researcher to examine the primary health care (PHC) activities that promote interprofessional practice (IPP). As the obstacles highlighted in the previous chapter correspond to countries with similar contexts, it is essential to highlight how IPP-promoting activities could be used to mitigate the obstacles (Article 2).

4.2. Submission details

Article 2 has been submitted to the Social and Health Sciences Journal, details around the publication can be observed in Table 4.1.

Table 4.1: Article details

Title	**Activities needed to promote interprofessional practice at primary healthcare level: a systematic review**
Authors	Kock, L., Mlenzana, N. B., Frantz, J. M
Year	2021
Journal	Social and Health Sciences Journal
Volume	
Issue	
Page no.	
Status	Revisions required, resubmitted for review 4 November 2022
Full citation	

4.3. Journal overview

The manuscript was submitted to the Social and Health Sciences Journal. The peer-reviewed journal provides a platform for students, life-long scholars, practitioners, and policymakers, from various professional backgrounds, to discuss and debate various issues related to health and social science. The Social and Health Sciences Journal is ideal for this paper because, despite being based in Africa, it provides information to the broader global south.

4.4. Submitted article

Activities needed to promote interprofessional practice at Primary Health Care level: A systematic review

Authors: Kock, L., Mlenzana, N., Frantz, J.

4.5. Abstract

Introduction: Currently, there is a trend toward interprofessional practice; consequently, healthcare professionals must devise strategies to address the challenges faced in the public health sector. Investigating how healthcare professionals promote interprofessional care principles to manage patient care outcomes is crucial. Primary health care is a significant level of health service delivery. Therefore, the implementation of interprofessional practice at this level is especially important.

Objective: This review aims to explore and describe the activities outlined in the literature, which are used to promote interprofessional practice at primary healthcare level.

Methods: A systematic search of seven databases was conducted for articles published between 2008 and 2021. All articles with a quantitative, qualitative, or mixed methodology, a primary healthcare facility study setting, and full-text availability were included. A methodological appraisal tool was adapted from the RE-AIM framework.

Results: Twelve studies were included in the final review. Interprofessional clinics, interprofessional collaborative practices, collaborative care processes, and interprofessional team training were the primary activities identified in the review. These studies aimed to promote interprofessional practice in healthcare settings through various activities. There was limited information regarding the efficiency of the activities.

Conclusion: Undertaking collaborative practice models appears to be the most practicable strategy for implementing interprofessional activities, according to the findings. Facility management must support this endeavor for its implementation to be successful.

Keywords: Clinical practice, interprofessional practice, primary health care, RE-AIM, interprofessional activities

4.6. Introduction

In the healthcare system, the burden of disease has shifted from acute to chronic, demanding a range of health professionals to address it (Reeves et al., 2008). Interprofessional Practice (IPP) has been defined as the collaboration between two or more professionals (World Health Organisation, 2010) to improve patient experience and population health, reduce healthcare costs, and improve the work experience of health professionals (Kahlili et al., 2019).

Various studies have been conducted to demonstrate the value of IPP. In many of these studies, IPP is promoted through the implementation of interventions. The implementation of IPP interventions necessitates the recruitment of a variety of resources and the allocation of funds. Forum theatre is a method that incorporates the principles of theatre where participants dramatize their concerns through craft scenes (Sommerfeldt, 2015). In a study conducted by Sommerfeldt (2015), forum theatre is used as an intervention to promote IPP. This activity allowed the author to describe the healthcare practice and its professional interactions through the co-creation of knowledge, insights, and opportunities for change in practice (Sommerfeldt, 2015). The study was conducted in a university theatre equipped to conduct the intervention effectively (Sommerfeldt, 2015). Reablement, a home-based rehabilitation intervention focused on intensive, goal-oriented, and interprofessional teams consisting of physiotherapists, occupational therapists and nurses offer assistance for people with functional impairments, was also highlighted in the literature (Hjelle et al., 2016). This 3-month intervention aimed to improve physical capacity, ability to perform functional activities, and quality of life (Hjelle et al., 2016). It is essential to consider the appropriateness of activities or interventions in a particular healthcare setting.

In a systematic review conducted by Reeves et al. (2017), evidence of interprofessional interventions from 2007 to 2015 was synthesised to understand the efficacy of these interventions. The review highlighted that strategies to promote IPP included interprofessional rounds, meetings, and checklists (Reeves et al., 2017). As interventions that improve interprofessional interaction are required in clinical practice, an investigation into the various interprofessional activities conducted in healthcare settings should be initiated. As we consider the various levels of healthcare, it is important to emphasise the significance of PHC.

Despite the definition of PHC developed at the Alma Ata Conference (World Health Organisation, 1978), countries have adopted varying definitions of PHC in practice (Muldoon et al., 2006). According to Muldoon et al. (2006), the term *primary care*, which refers to doctor-patient services, has been adopted by developed countries. However, the PHC approach has been adopted in developing countries rather than a specific service to guide healthcare provision (Muldoon et al., 2006). Both terms refer to an individual's access to the first point of contact with the health care system (Muldoon et al., 2006). At this level of care, services are coordinated and comprehensive (WHO, 1978). Therefore, the competence of PHC-level health service providers must align with these definitions' expectations. As we consider these

expectations, it would be ideal to explore how IPP can promote the skills and knowledge of health service providers at this level of care.

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) (2018) who define an effective PHC workforce as the collaboration between managers, administrators, health professions educators, and health professionals, endorse the concept of teamwork. IPP expedites the growing demand for effective teamwork among health and other professionals (Kahlili et al., 2021). Nevertheless, given the unique structures of the various levels of care, it is essential to highlight activities that promote IPP at the appropriate level of health care. According to Findyartini et al. (2019), IPP improves community healthcare access, the efficacy of care systems, and the quality of services. Therefore, this review aims to describe the activities that promote IPP among health professionals at the PHC level.

4.7. Methods

4.7.1. Review question

The primary review question was, "What activities are used to promote IPP at the PHC level?" As the review focused on observational studies, the population, exposure, and outcome (PEO) format assisted the researcher in identifying relevant information and formulating an appropriate review question (Maia & Goncalves, 2012). The population (P) is the health professionals in a PHC setting, the exposure (E) is the activities that promote the IPP, and the outcome (O) is the effective IPP (Maia & Gonalves, 2012).

4.7.2. Search strategy

To explore and define the activities required to promote IPP, a systematic search of the following databases was conducted from 2008 to 2021: Cumulative Index to Nursing and Allied Health (CINAHL), Medline, PubMed, Elsevier, Excerpta Medica Database (EMBASE), African Journals Online, and SAGE. The articles included in the review contained a qualitative, quantitative, or mixed-methods methodology, the study was conducted in a PHC facility, and the researcher had access to the full text. The search terms included interprofessional education, collaborative practice, healthcare professionals, multidisciplinary teamwork, interprofessional practice, interprofessional learning, interprofessional activities, and primary healthcare.

4.7.3. Inclusion criteria

The criteria for including studies in the review were studies that were: (i) published between 2008 and 2021, (ii) published in English, and (iii) conducted in a PHC facility, and (iv) full-

text accessible. To guarantee the inclusion of the most recent studies on activities that promote the IPP, the researcher selected a 13-year period (Meline, 2006).

4.7.4. Methods for review

The initial search was conducted by the primary researcher (LK). Titles and abstracts were reviewed to assess whether they met the criteria for inclusion in the review. JF conducted an additional search in one database to ensure the trustworthiness of the terms used. The initial search yielded 3,254 articles for the keywords, interprofessional practice, healthcare professional, and primary healthcare. Subsequent searches yielded 2,842 articles for interprofessional practice, healthcare professional, primary healthcare facility, and interprofessional activity. Therefore, yielding a total of 6,096 articles. The use of citation searching resulted in the inclusion of eight further articles, and 190 articles were selected as the sample. The reviewers identified twelve (12) articles that met the inclusion criteria and independently read each article to ensure the methodological quality (figure 4.2).

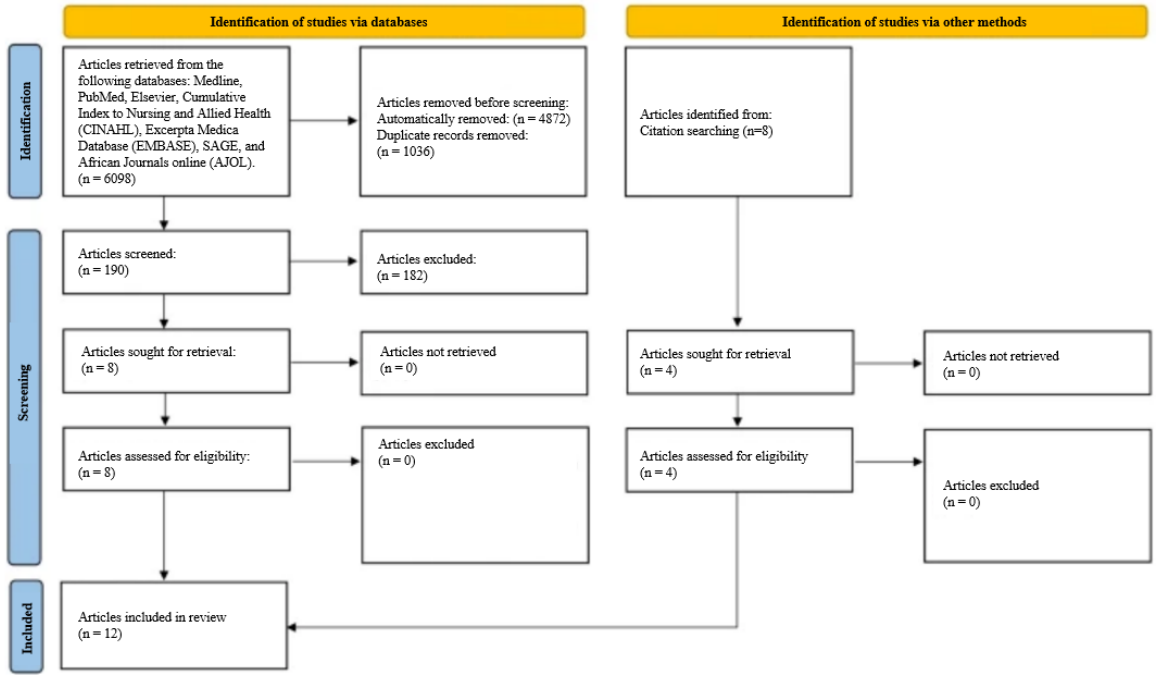

Figure 4.2: PRISMA 2020 Flow diagram of the search strategy and results

Source: Page et al. (2020)

4.7.5. Methodological quality appraisal

The methodological quality of the articles was assessed using an instrument adapted from the RE-AIM framework (Glasgow et al., 2019). The RE-AIM framework was created with the

intention of resolving the delayed and unequal translation of scientific advancements into practice, focusing on the impact and policy pertaining to public health (Glasgow et al. 2019). As the need for a shift from conceptualisation to the operationalisation of IPP arises (Frantz & Rhoda, 2017), the RE-AIM can be used to facilitate this shift. In clinical practice, the RE-AIM framework assists in addressing challenges to implementation by enhancing intervention reach, delivery, and reducing health disparities (Glasgow et al., 2013). The RE-AIM framework comprises five dimensions: *reach*, *effectiveness*, *adoption*, *implementation*, and *maintenance* (Glasgow et al. 2019). In a study by Harden et al. (2015), the RE-AIM framework is utilized to report the extent to which systematic review articles met the framework's five dimensions. The RE-AIM framework can be used to assess the level of reporting on the study's dimensions (Harden et al. 2015). To determine whether the articles in this review facilitate the translation of IPP into practice, the RE-AIM framework is used to evaluate the amount of specificity with which actions that promote IPP at the PHC level are described in the selected articles. Therefore, the RE-AIM framework is adapted to develop a quality appraisal tool in this review.

In a study by Kader et al. (2019), the RE-AIM framework's dimensions are employed to evaluate the quality of the included articles. Similar technique is used in this review. The *reach* dimension assesses the representatives, participation rate, and inclusion and exclusion criteria of the target population (Harden et al., 2015). The *effectiveness* dimension includes the intended outcome, the limitations of the intervention or activity, as well as the outcomes and the attrition rate of the participants (Harden et al., 2015). The *adoption* dimension assesses the setting, how the activity was adopted into the setting, and who delivered the activity (Harden et al., 2015). *Implementation* includes the resources (cost and time) and reliability of the activity (Harden et al., 2015). Lastly, the *maintenance* dimension assesses the long-term impact of the activity, and the indicators used for follow-up (Harden et al., 2015). The development of a critical appraisal tool from the RE-AIM framework enabled the researcher to allocate a score out of 100 to each article included in the study. Using the scores, the articles were rated using three levels, namely, weak (<33%), moderate (34 – 66%), and strong (>67%).

4.7.6. Data extraction

The information extracted from the included studies was entered into a self-developed data extraction form that was created and piloted before to the review. The following information was gathered to describe the included studies: author, study year, study design, and study aim. Subsequently, data were extracted according to the dimensions of the RE-AIM framework as

follows: *Reach* (inclusion/exclusion criteria, representativeness), *Effectiveness* (intended outcome, outcome of activity), *Adoption* (setting), *Implementation* (duration and frequency of activity), and *Maintenance* (long-term effects, indicators for follow up).

4.8. Results

All twelve articles were included in the review because their methodological quality was rated as either moderate (34 – 66%) or strong (>67%). Four of the studies were rated as moderate (Légaré et al., 2011; Mior et al., 2015; Riffin et al., 2021; Sanchez et al., 2018). Eight of the included studies scored a strong rating (De Sutter et al., 2019; Jakobsen et al., 2017; Moe et al. 2010; Nagelkerk et al., 2018; Schentrup et al., 2018; Selleck et al., 100; Stans et al., 2013; Szafran et al., 2019). The final sample of articles comprised of six qualitative articles, three quantitative articles, and three articles with a mixed methodology. Four studies were conducted in the United States of America, one in Denmark, one in Germany, one in the Basque Country, one in the Netherlands, and the remaining four were conducted in Canada. Five of the twelve studies focused on the activity's effectiveness, three on its feasibility, and four on the description of the activity. The activities were incorporated into practice in these studies using various methods. These activities are described in Table 4.2, using the RE-AIM framework.

Table 4.2.: Interprofessional practice activities using the RE-AIM framework

Study	Study design	Aim of the study	REACH		EFFECTIVENESS		ADOPTION	IMPLEMENT-ATION	MAINTEN-ANCE
			Inclusion & exclusion criteria	Represen-tatives	Intended outcomes of main activity	Outcomes of main activity	Study setting	Activity	Long-term effects
De Schutte et al, 2019	Qualitative realist evaluation	To provide insight in how the implementation of interprofessional collaboration leads to overall satisfaction among staff	Not reported	CHC staff, including health professionals and receptionists,	To make mental healthcare more efficient and less burdensome	Improved staff morale. Decreased burden of patient encounters and staff felt more valuable to patients	CHC Rabat, Belgium	Interprofessional mental health team	Article describes impact after 1 year
Jakobsen *et al.*, 2017	Exploratory qualitative case study approach	To enhance the understanding of interprofes-sional learning of students in an outpatient setting	Not reported	Students and staff working at the outpatient clinic	To prepare students to take on an authentic professional role through an inter-professional student-led clinic	Improved professional and pedagogical knowledge of health professionals Improved practical competencies for students	Outpatient clinic, Denmark	Interprofessional assessment and treatment of a patient 3 hours, two days a week	No follow-up reported Recommend-ations for future research given
Legare *et al.*, 2011	Mixed methods study design	To explore the validity of the shared decision-making model in PHC	3 inclusion categories reported on	Health professiona-ls, patients, clinicians from PHC teams	To assist inter professional health care teams in shared goal-setting for their patients	No outcomes for this activity as the model was not implemented	Primary care settings, Canada	An interprofessional shared decision-making model - Description article	No follow-up reported Recommend-ations to improve the model.
Mior *et al.*, 2010	The grounded theory research method using qualitative study design	To describe a conceptual framework aimed at facilitating and advancing collaboration	Not reported	Experts in PHC practice, research or health policies.	To enhance collaboration between two professions	No outcomes for this activity as the framework was not implemented	Primary health care network, Canada	A conceptual framework - Description article	No follow-up reported Recommend-ations to implement and evaluate the framework in practice
Moe *et al.*, 2010	Quantitativ e	To describe the design of the clinical associate program	Not reported	Family practice clinics with an active clinical associate in practice in primary care network	To improve patient access to health care services	Increased clinic capacity	Family practice clinics, Canada	Clinical associate is undergoes capacity development to improve skills and knowledge	Article describes the impact over a four year period Recommendations for future research given

Nagelkerk *et al.,* 2018	Sequential mixed methods design	To evaluate the an IPP program in a family practice	Not reported	All staff and students working at the health clinic	To improve communication, shared decision-making, mutual respect and dialogue, , and patient outcomes	Participants showed increased knowledge in concepts related to inter-professionalism	Health clinic, United Sates of America	A student-clinician education program	Article describes impact over 12 months Recommend-ations for future research given
Riffin et al., 2020	Qualitative study design	To identify primary care clinicians' challenges with and approaches to managing patient-family interactions and to explore patient an family caregivers' attitudes and responses to clinicians approaches	Inclusion criteria expanded upon. No exclusion criteria	Primary care clinicians, staff, administrators, older patients, family caregivers	To influence the content and dynamics of patient consultations	Impact on patient autonomy, patient-family disagreements, obtrusive family members	4 Primary care practices, New York City and Pennsylvania, United States of America	Caregiver involvement in patient consultation	No follow-up reported
Sanchez *et al.,* 2018	Mixed methods design	To assess the effectiveness of a collaborative model	*Inclusion:* All the patients aged in a specified bracket, *Exclusion:* No diagnosis of type II diabetes	All patients that meet the inclusion criteria	To optimise clinical preventative practice	Not reported Guidelines provided	PHC centres, Basque Country	Type II diabetes prevention activity involving 150 minutes of exercise per week	Indicators for follow-up provided
Schentrup *et al.,* 2018	Quantitativ e	To describe the effectiveness of interprofes-sional team training model	Every individual interacting with patients' overall care process at the clinic	Inter-professional core team, staff rotating though the clinic, and administrative staff	To improve communication and teamwork skills among health care professionals	Improvement in team performance	A rural health clinic, United States of America	Fortnightly interprofessional team meetings, with reinforcement meetings from the facilitators every 6 months	Conducted at 6-month intervals over 3 years
Selleck *et al.,* 2017	A case study approach using a qualitative study design	To describe the learning and understanding of a new model of care	All clinicians who practiced at the Clinic	Clinicians and students	To provide opportunities for people to break the cycle of generational poverty by improving access to healthcare services	Participants developed an understanding of IPCP and IPE core competencies through their interactions with one another and in relation to the care they	Medical clinic, United States of America	An interprofessional clinic operated 6 hours a day, 3 times a week	Conducted over a 3-year period

						provided to patients			
Stans *et al.*, 2013	Qualitative	To improve interprofes-sional practice using implementation model	All the stakeholders involved in treating children in this particular setting	Parents, health professionals, teachers and centre manager	To improve inter-professional care delivery	An understanding of the current health care processes and barriers to inter-professional practice	A paediatric primary care centre, Netherlands	The development of an interprofessional process model	No follow-up Recommend-ations for future research given
Szafran et al, 2019	Quantitativ e	To examine the extent to which family physicians routinely collaborate with other health professionals in patient care	Family physicians	500 family physicians	To increase access to primary care, enhance health promotion and disease prevention, and increase healthcare of patients with chronic diseases	Physicians part of the primary care team collaborated more with other health professionals than physicians who are not a part of a primary care team	College of Physicians and Surgeons of Alberta, Canada	Interprofessional primary care team	No follow-up reported

4.8.1. Reach

All twelve studies reached the stakeholders of the PHC settings. Stakeholders include staff, students, family/caregivers, and patients. The twelve studies included staff members as the implementers, with the intended outcomes of the activities in five studies focusing solely on staff (De Schutte et al., 2019; Jakobsen et al., 2017; Mior et al., 2010; Schentrup et al., 2018; Selleck et al., 2017). The staff outcomes included increased staff morale (De Schutte et al., 2019), improved collaboration between two professionals (Mior et al., 2010), improved teamwork (Schentrup et al., 2018), and increased understanding of IPP and interprofessional education (IPE) (Selleck et al., 2017). Seven professions were included in the studies including, nurses (De Schutte et al., 2019; Jakobsen et al., 2017; Schentrup et al., 2018; Selleck et al., 2017), physicians (Jakobsen et al., 2017; Mior et al., 2010; Schentrup et al., 2018; Selleck et al., 2017), social workers (De Schutte et al., 2019; Selleck et al., 2017), psychotherapists (De Schutte et al., 2019), chiropractors (Mior et al., 2010), pharmacists (Schentrup et al., 2018), optometrists (Selleck et al., 2017), and dieticians (Selleck et al., 2017).

Three studies included students as participants (Jakobsen et al., 2017; Nagelkerk et al., 2018; Selleck et al., 2017). The reasons for the inclusion of the students were to develop interprofessional leadership skills in health professionals (Jakobsen et al., 2017), to integrate them into the facility's care teams (Nagelkerk et al., 2018), and to improve communication among students by creating an authentic professional space for practice (Selleck et al., 2017).

Two studies reached the families/caregivers of the patients (Riffin et al., 2020; Stans et al., 2013). According to Riffin et al. (2020), the involvement of patients/caregivers in patient consultation influences the content and dynamic of the consultation. At the same time, Stans et al. (2013) considered families/caregivers as part of the patient's care process.

Ultimately, the activities in all twelve studies influenced the care delivered to the patient. The positive outcomes of the activities for patients included staff that are more valuable to patients (De Schutte et al., 2019), increased patient access to health services (Jakobsen et al., 2017; Moe et al., 2010; Selleck et al., 2017; Szafran et al., 2019), improved patient involvement (Légaré et al., 2011), improved patient health outcomes (Mior et al., 2010; Nagelkerk et al., 2018; Sanchez et al., 2018; Szafran et al., 2019), and improved quality of care (Riffin et al., 2020; Schentrup et al., 2018; Stans et al., 2013).

4.8.2. Effectiveness

Five studies failed to achieve their activity's intended outcomes (Légaré et al., 2011; Mior et al., 2010; Sanchez et al., 2018; Stans et al., 2013; Szafran et al., 2019). Three of these studies sought to ascertain the feasibility of the activity in the setting (Légaré et al., 2011; Sanchez et al., 2018; Szafran et al., 2019). In the other two articles, the activities were merely described (Mior et al., 2010; Stans et al., 2013). Four studies promoted IPP by improving patient access to healthcare (Moe et al., 2010), improving communication among staff (Nagelkerk et al., 2018), enhancing team performance (Schentrup et al., 2018), as well as developing and improving staff understanding of concepts related to IPP (Selleck et al., 2017).

4.8.3. Adoption

Adoption refers to how the activity was incorporated into the setting (Harden et al., 2015). All twelve studies were conducted at PHC facilities. Eight of the activities were adopted into the PHC settings in which the studies were conducted (De Schutte et al., 2019; Jakobsen et al., 2017; Moe et al., 2010; Nagelkerk et al., 2018; Riffin et al., 2020; Schentrup et al., 2018; Selleck et al., 2017; Szafran et al., 2019). In these studies, staff members (De Schutte et al., 2019; Jakobsen et al., 2017; Moe et al., 2010; Riffin et al., 2020; Schentrup et al., 2018; Selleck et al., 2017; Szafran et al., 2019), students (Jackson et al., 2017; Selleck et al., 2017), an external research centre (Nagelkerk et al., 2018) adopted the activities into practice.

4.8.4. Implementation

Mixed findings emerged from the findings regarding the implementation of the activities. One activity was implemented twice a week for three hours per session (Jackson et al., 2017). An interprofessional clinic was implemented six hours a day, three days a week (Selleck et al., 2017). According to one study, the activity was conducted fortnightly, and reinforcement sessions were conducted bi-annually (Schentrup et al., 2018).

4.8.5. Maintenance

Maintenance refers to the long-term effects and the indicators for follow-up. Four studies reported the effectiveness of the activities, which were followed up after one (De Schutte et al., 2019; Nagelkerk et al., 2018), three (Schentrup et al., 2018), and four years (Moe et al., 2010). In one study, the activity is described by explaining what the health professionals have learned over a 3-year period (Selleck et al., 2017).

4.9. Discussion

This review analysed the articles that describe IPP-promoting actions at the PHC level. The findings of the review are discussed by describing how the activities described in the included articles, and how it could be implemented in developing countries.

4.9.1. Activities that promote IPP

Four main activities that promote IPP were identified: *interprofessional clinics, interprofessional collaborative care processes, interprofessional collaborative practice models*, and *interprofessional team training*. The main activities were incorporated into practice in these studies using various methods.

- Interprofessional clinics

Two studies *identified interprofessional clinics* as the main activity (Jakobsen et al., 2017; Selleck et al., 2017). In a student-led interprofessional clinic, a medical student and a nursing student worked collaboratively to assess and treat patients (Jakobsen et al., 2017). Health professionals supervised students during pre-consultation meetings and post-consultation reflections (Jakobsen et al., 2017). This activity enhanced health workers' interprofessional leadership skills (Jakobsen et al., 2017). An interprofessional clinic allowed health professionals to establish a shared understanding of IPP (Selleck et al., 2017). Experienced

staff and students used a team-based approach to ensure the treatment of patients seeking treatment for chronic illnesses (Selleck et al., 2017).

Despite the allotted time for an interprofessional clinic, health service providers would be compelled to work outside of their normal care procedure. Given the overwhelming nature of health service professionals' workload, this may constitute a barrier to the interprofessional clinic's implementation. According to Gowda et al. (2019), reconciling the requirements of an interprofessional clinic with their typical workload is a hurdle to the successful implementation of this activity. However, the patients treated in the interprofessional clinics would have been treated in the current practice, resulting in a gradual decrease in the practice's patient load. Another aspect influencing the effective implementation of this activity is facility management buy-in (Gowda et al., 2019). Consequently, before the implementation of an interprofessional clinic can be considered, shared care practices must be in place at the facility.

- Interprofessional collaborative care processes

Four studies employed *interprofessional collaborative care processes* to address specific health conditions (De Sutter et al., 2019; Mior et al., 2010; Sanchez et al., 2010; Szafran et al., 2019). *Interprofessional collaborative care processes* were implemented to make mental healthcare more efficient and less burdensome (De Sutter et al., 2019), improve collaboration among health professionals (Mior et al., 2010), improve patient outcomes (Sanchez et al., 2018), and increase access to primary care (Szafran et al., 2019).

A variety of mental health practitioners were brought together to form a collaborative mental health care process (De Sutter et al., 2019). Patients with psychological needs were assigned to at least two practitioners who utilized information sharing and case discussions to improve the health outcomes of their patients (De Sutter et al., 2019). Mior et al. (2010) established a care framework to promote collaboration between chiropractors and physicians. This framework detailed the care processes that health service providers and patients required to execute, particularly patient-centred, shared decision-making, and a shared goal (Mior et al., 2010). The collaborative care process identified by Sanchez et al. (2010) focused on patients with diabetes mellitus. A three-step care process provides nurses and doctors with a guideline to the addressing the patient’s needs (Sanchez, 2010). Szafran et al. (2019) determined the degree to which physicians engage with other health professions in the treatment of diabetes mellitus.

Either these physicians participated in an interprofessional primary care team, or they did not. The primary care team was comprised of diverse health professionals who shared electronic patient records to encourage interprofessional communication and collaboration (Szafran et al. 2019).

However, as interprofessional collaborative care processes address specific health conditions, it reverts the PHC agenda back to the selective PHC approach. Selective PHC was a strategy employed to implement the PHC approach, specifically in developing countries (Magnussen et al., 2004; Baum et al., 2016). As chronic diseases place a greater burden on the health system, a PHC facility should not be built to treat a particular category of disorders (Baum et al., 2016). Comprehensive PHC employs actions that address local social determinants of health to guarantee that the population resides in healthy, health-promoting communities (Baum et al., 2016). Therefore, if governments intend to adopt a holistic approach to PHC, they should examine IPP models that promote such an approach.

- Interprofessional collaborative practice models

In four studies, *interprofessional collaborative practice models* were used as the main activities (Légaré et al., 2011; Moe et al., 2010; Riffin et al., 2020; Stans et al., 2013). An interprofessional shared-decision making model promotes patient-centred care through active patient education and information sharing among health professionals (Légaré et al., 2011). The primary-care clinical associates programme model involves the collaboration of a clinical associate and health professionals to promote IPP (Moe et al., 2010). A health professional from any discipline takes up the role of clinical associate in an interprofessional team to develop collaborative care plans (Moe et al., 2010). Involving family members and caregivers in patient consultation influences the content and dynamics of the consultation (Riffin et al., 2020). An IPP model was used to promote collaboration, coordination of care, and patient-centredness (Stans et al., 2013). These studies revealed the importance of establishing a coordinated structure within their service delivery context. Shared assessment forms (Stans et al., 2013) and a common understanding of the patient's health condition (Légaré et al., 2011) could be incorporated into practice to avoid duplication of assessments and interventions. Discipline-specific language often limits a common understanding of a health condition (Moe et al., 2010). To ensure that professionals have a shared understanding of the patient's condition, shared assessment forms could be used in team meetings to share

patient information and discuss various intervention options. Staff are the main implementers of the interprofessional collaborative practice models.

While it is widely known that adequate staffing is essential to effective teamwork, the public health sector faces a major lack of human resources. Consequently, the system has a major backlog, and patients are given follow-up appointments in weeks. Therefore, it is imperative to highlight stakeholders who can ensure the continuum of care between appointments. Stans et al. (2013) expressed the importance of patient, caregiver, and family involvement, as it improves the feasibility of the care process in IPP. Caregivers and family could influence the patient's decision-making (Légaré et al., 2011; Riffin et al., 2020). According to Mlenzana and Frantz (2017), involving the caregiver and families in consultations improves communication, as it could combat challenges, relate to language barriers. Language barriers play a major role in poor communication and interaction among health professionals and their patients (Shamsi et al., 2020).

- Interprofessional team training

Interprofessional team training promoted IPP in two studies (Nagelkerk et al., 2018; Schentrup et al., 2018). In the study of Nagelkerk et al. (2018), a student-clinician education programme provided foundational information on interprofessional collaborative practice to increase patient access to healthcare and improve patient outcomes. A team-based training model was used to improve interprofessional communication (Schentrup et al., 2018). The review highlighted the importance of interprofessional communication between health professionals and health professionals with patients. A requirement to improve communication among rehabilitation professionals is to create face-to-face platforms for communication. Increasing the number of face-to-face meetings among staff improves their understanding of each other (Andvig et al., 2014). Seven studies used regular interprofessional meetings to improve communication among health professionals (Jakobsen et al., 2017; Légaré et al., 2011; Mior et al., 2010; Nagelkerk et al., 2018; Sanchez et al., 2018; Selleck et al., 2017; Stans et al., 2013).

In a study by Suter et al. (2009), health professionals viewed communication and role clarification as the two most relevant core competencies in practice. Anthoine et al. (2014) observed that effective communication among health professionals improved the communication between health professionals and patients. Communication among health professionals is important as it influences the quality of the patient's information (Anthoine et

al., 2014). The lack of communication was a frequently mentioned barrier to successfully implementing community based PHC (Lafortune et al., 2015).

Considering the overburdened nature of the public health system, health professionals may view additional meetings as time away from attending to patients. To ensure that these meetings do not halt the flow of patients receiving healthcare, health professionals could create a roster of interprofessional teams to attend these meetings while service delivery continues. To encourage buy-in and commitment from health professionals to this activity, face-to-face meetings should not be static or formal discussions. Daily huddles are short and frequent interprofessional meetings to discuss patient care plans (Nagelkerk et al., 2018). Alternatively, activities to promote communication could be offered as team-building activities, such as personality profiles or scenario evaluations (Schentrup et al., 2018).

In summary, the activities in the studies included in this review promoted IPP by developing and enhancing various skills and knowledge of the participants. However, these activities were developed, implemented, and evaluated in developed countries. In terms of their health systems, developing countries face unique difficulties.

4.9.2. Interprofessional practice in developing countries

As the definition adopted by developing countries indicates, PHC has been used as an approach to health care (Muldoon et al., 2006). Africa, comprised of developing and underdeveloped countries, faces challenges related to human resource shortages, which thus poses a threat to ensuring access to health care for all (African Forum for PHC, 2021). In response to these challenges, the African Forum for PHC strongly advocates incorporating teamwork in the health sector. However, despite the global call for an interprofessional model of care, most IPP literature is from South Africa (Botma & Snyman, 2019). In South African literature, IPP activities focus on health professions education and academic health facilities. Muller (2019) reported on a collaborative care project amongst an interprofessional team of students who conducted home visits. Despite the study's positive outcomes by Muller (2019), a higher education institution (HEI) conducted the study. Thus, implying access to financial and physical resources for participants. It is important to understand what IPP activities are currently happening at the various levels of healthcare. Regarding IPP at the PHC level, the literature focuses on understanding the contextual challenges at the facilities. At a South African PHC facility, barriers to the effective implementation of interprofessional teams

included hierarchy, logistics, infrastructure, time constraints, and administration processes (Kock et al., 2021).

Therefore, it is unlikely that developing countries can adopt IPP concepts and theories as a blueprint. However, it is evident that IPP activities are increasingly reported in the health professions education sector. HEIs are funded by national governments and acquire research funds from various funders. This allows HEIs to conceptualise, operationalise and evaluate IPP in different settings faster than the public health sector. Therefore, care should be given to a theory that will assure a translation into practice that does not demand excessive expenses. The deliberate practice theory employs reflection to enhance practice (Wang & Zorek, 2016). As practitioners reflect and receive feedback to self-adjust and modify their service offering for maximum efficacy, their practice is enhanced.

In contrast to developing countries, developed countries can practice what they call *primary care* as extensive research has been conducted in their countries. In these countries, health facilities present adequate financial, human, and physical resources. As the global call for an interprofessional model of health care was made, these countries are in a better position to adopt the IPP blueprints from literature with minimal adaptations. While the operationalisation of IPP relies on a strong conceptual understanding, there need to be drivers to developing appropriate activities for developing countries.

4.10. Conclusion

Implementation of the coordinated care structure appears to be the most practicable approach. The coordination of care relies on synchronicity of health care service delivery. The aim of a coordinated care structure is to improve patient outcomes through collaboration, and to decrease health care costs by shared assessment tools (Schultz & McDonald, 2014). However, for health service providers to successfully implement IPP in their facility, facility and unit managers must give the green light for this activity to commence. This analysis could serve as a starting point for the development of a model that encourages collaborative practice at the PHC level.

4.10.1. Limitations

Despite an exhaustive search of the most recent literature, none of the included research were undertaken in developing or underdeveloped nations. Nonetheless, this analysis enables

academics, facility management, and the government to leverage the existing activities to build activities suited to the environment of a developing country.

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4.12. Summary

In this chapter, the researcher highlighted the activities used to promote IPP at PHC level. The review highlighted four main activities that promoted IPP, which were implemented into practice, using various methods. As none of the included studies considered the challenges related to a developing country, such a South Africa, a combination of the activities could be aligned to the healthcare processes of a South African facility. The activities mentioned in this chapter could be employed to enhance IPP at the PHC level in the rehabilitation sector. To ensure relevance to the case study setting, the following chapter examines how the activities found in the review could be used to lessen the context-specific difficulties mentioned in chapter 3.

CHAPTER FIVE

STAGE 1: PHASE 3: THE INCORPORATION OF ACTIVITIES THAT PROMOTE INTERPROFESSIONAL PRACTICE INTO THE REHABILITATION SECTOR TO ADDRESS CONTEXTUAL CHALLENGES

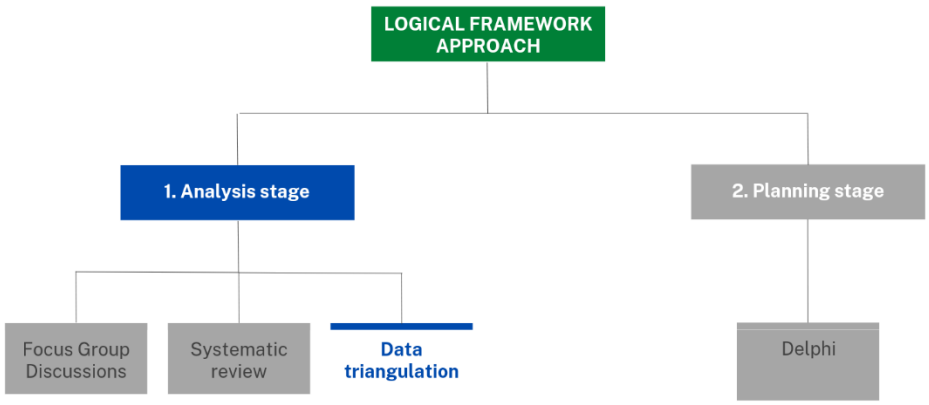

Figure 5.1: Phase 3 of the Logical Framework Approach: Data Triangulation

5.1. Introduction

In this chapter, the final step of the analysis stage is conducted. By triangulating the data collected in the previous chapters, the researcher's aim was to determine how the activities, highlighted in the systematic review, could be used to address the challenges at a selected PHC facility. This information is pivotal in the construction of implementation plans (Article 3).

5.2. Publication details

Article 3 was submitted to the Southern African Journal of Public Health, and details about the publication can be viewed in Table 5.1.

Table 5.1: Article details

Title	**Analysis of a Primary Health Care facility for the development of an interprofessional intervention: a Logical Framework approach**
Authors	Africa, L., Frantz, J. M., Mlenzana, N. B.
Year	2022
Journal	Southern African Journal of Public Health.
Volume	5
Issue	3
Page no.	77 – 85
Status	Published
Full citation	Africa, L., Frantz, J., Mlenzana, N. (2022) Analysis of a primary health care facility for the development of an interprofessional intervention: a Logical Framework Approach. *Southern African Journal of Public Health, 5*(3):77-85. https://doi.org/10.7196/

5.3. Journal overview

To strengthen health systems, the Southern African Journal of Public Health aims to create a synergy between academia and the implementation of policies. This peer-reviewed journal is ideal for this paper, as the aim of this analysis is to ensure the successful implementation of an interprofessional rehabilitation model, which would ultimately result in the successful implementation of Healthcare Plan 2030.

5.4. Published article

Analysis of a Primary Health Care facility for the development of an interprofessional intervention: a Logical Framework approach

Authors: Africa, L., Frantz, J., Mlenzana, N.

5.5. Abstract

Background. The integration of rehabilitation into primary healthcare has been met with various challenges. In response to these challenges, a rehabilitation model was developed for this level of care. However, the model does not include the skills needed to execute the phases of the model. The incorporation of activities that promote interprofessional practice into the rehabilitation model can be used as a guideline for the successful implementation of the model at primary healthcare level.

Objective. To identify the activities that promote IPP to address contextual challenges at a primary healthcare facility in the Western Cape Province, South Africa.

Methods. Two documents, namely the transcripts from focus group discussions and a systematic review, were analysed using the READ approach. The data collected from these two documents were extracted and analysed into the five phases of the proposed rehabilitation model.

Results. The data from the document analysis highlighted the contextual challenges, the appropriateness of the phases of the rehabilitation model to address these challenges, and how the strategies that promote IPP at primary healthcare level can be used to address the contextual challenges. The problems identified from the rehabilitation model align to the contextual challenges identified in the document review. The strategies identified in the systematic review can be used to address the contextual problems. In addition, the strategies can be incorporated into a rehabilitation model as an interprofessional rehabilitation model for primary healthcare.

Conclusion. The data collected from the document analyses can be used to develop actions that can be implemented into every phase of the rehabilitation model, thus ensuring successful design guidelines that can integrate appropriate IPP guidelines into the rehabilitation model for a primary healthcare facility.

5.6. Introduction

Global health trends have resulted in an increased need for the integration of rehabilitation into primary healthcare.[1] At primary healthcare (PHC) level, the majority of health conditions are diagnosed, functional impairments are identified and referrals to other services are given.[2] Rehabilitation plays a pivotal role in improving function and quality of life in patients with health conditions that limit function.[2] The integration of effective rehabilitation services into

PHC has, however, been met with challenges. In the South African (SA) healthcare system, the rehabilitation sector at PHC level is understaffed despite having to service the majority of the disabled community.[3] In response to these challenges, a rehabilitation model for PHC was developed.[3] The rehabilitation model, however, fails to highlight the actions needed to execute its every phase successfully. Guidelines relating to the knowledge and skills needed at every phase will assist facility management in successfully implementing the rehabilitation model at the various facilities (Fig. 5.2).

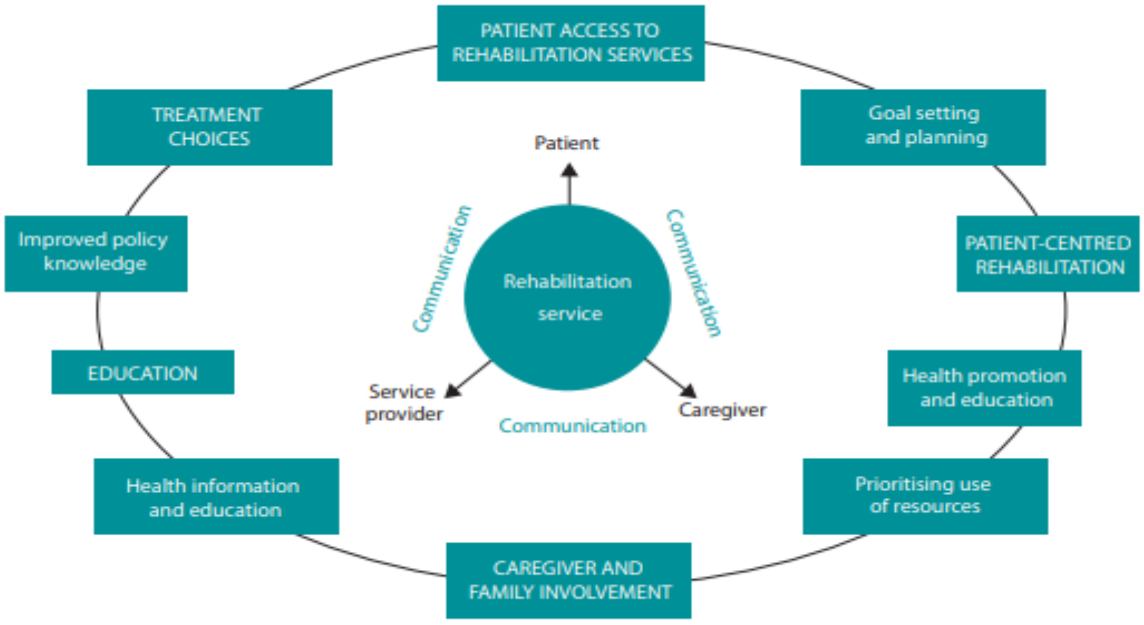

Figure 5.2. Proposed rehabilitation model

Consequently, while considering this model for rehabilitation, as well as the basic skills and knowledge required for its implementation, it would be ideal to view this in the context of interprofessional practice (IPP). IPP is the interaction between two or more health professionals from different backgrounds to improve the quality of care of patients.[4] However, interventions that promote IPP have been poorly conceptualised.[5] As a result, the health professionals executing IPP interventions are often unable to define and execute the concepts related to IPP.[5] IPP interventions are activities integrated into current health practices to improve collaboration between health professionals, which results in enhanced quality of care.[5] Prior to the development of an interprofessional intervention, the impact of IPP on current practices and the activities appropriate to the PHC setting need to be determined. The

development of an interprofessional intervention therefore requires a comprehensive approach. In order to identify the gaps in a system effectively, a framework is needed to guide this analysis. The logical framework (logframe) approach is the process by which the elements of an intervention are formulated.[6] One of the main goals of the logframe approach is to provide a shared understanding of an intervention.[7] The logframe approach involves key stakeholders to conceptualise an intervention.[6] The logframe approach is considered an ideal methodology in this study as it allows the researcher to develop an interprofessional intervention in the rehabilitation sector at PHC level. The logframe approach incorporates two stages, namely the analysis stage and the planning stage. The analysis stage encourages stakeholder participation. In the planning stage, the logframe matrix is developed, which is the product of the logframe approach. In this study, the first stage of the logframe approach is used to determine how the activities that promote IPP can be incorporated into the rehabilitation sector to address contextual challenges.

5.7. Methods

5.7.1. Research design

The research design for this study was a document analysis, which allows the researcher to provide context, and complements different types of research.[8] The READ approach is a systematic method for examining documents to extract information.[9] This method comprises four steps: (i) ready your documents; (ii) extract your data; (iii) analyse your data; and (iv) distil your findings. In the first step, the number of documents, type of document and the scope of the research question the analysis aims to address are determined.[9] The second step involves reading all documents comprehensively, in order to capture significant information.[9] The penultimate step ascribes meaning to the extracted information.[9] The final step involves using the data to answer the research question.[9]

5.7.2. Data collection

In this study, data was collected by analysing two documents. The data collection process is explained using the READ steps.

Ready your documents

The first document comprises transcripts from four focus group discussions (FGDs) conducted with health professionals and administrative staff who provide services in the rehabilitation sector at PHC level (health service providers, personal communication, 2019). The research

questions that the FGDs, which formed a part of a larger study, aimed to explore related to health professionals' perceptions of, attitudes toward and understanding of IPP. The facility under study includes a clinic, trauma and midwife obstetrics unit. The health services at the clinic are rendered by administrators, family physicians, various levels of nurses, a radiography team, pharmacists and pharmacy assistants, a physiotherapist, a dietician, a social worker, health promoters and a sessional occupational therapist. All the staff working at the clinic sector of the facility were invited to participate in the study. Purposive sampling was used to select participants according to specified criteria.[10] The study sample comprised of 33 health service providers from different departments of the clinic. The six-step thematic analysis devised by Braun and Clarke[11] was used to analyse the FDGs. The second document used in the data collection process was a systematic review. A systematic search of seven databases was conducted for articles that focused on the activities needed to promote IPP at PHC level. All articles on studies conducted in a PHC setting with a quantitative, qualitative or mixed methodology, published between 2008 and 2018, and where the researcher had access to the full text, were included. An adaptation of the RE-AIM framework [12] was used to determine the methodological quality of the nine full-text articles included in the review. The five components of the RE-AIM framework allowed the researcher to develop a methodological appraisal. As the RE-AIM framework is employed to provide an overview of interventions that address health inequalities, [12] it was ideal to adapt its components to highlight the activities that promote IPP at PHC level. Therefore, the RE-AIM framework was adapted to develop a data extraction tool.

Extract your data

The analysis stage of the logframe approach consists of three components, namely: problem analysis; objective analysis; and strategy analysis.[6] Data from the transcripts of the FGDs and the systematic review were extracted to analyse the problems and the strategies. Problem analysis assesses the main challenges that the intervention will address. [13] Traditionally, during the objective analysis phase, the problems are phrased as objectives;[13] however, the objectives are highlighted in the rehabilitation model by Mlenzana and Frantz.[3] In the present study, the objectives from the rehabilitation model are phrased as problems. To ensure appropriateness of the rehabilitation model for this facility, it is important to understand the contextual challenges and how they relate to the problems derived from the objectives. Consequently, the problem analysis component of the analysis stage of the logframe approach

was extracted from the transcripts of the FGDs. The objectives could be analysed through the development of a means-to-end diagram.[13] The 'means-to-end' diagram displays the objective in the top tier as the utopia, and the lower tier as the means to achieving the utopia (Fig. 5.3).

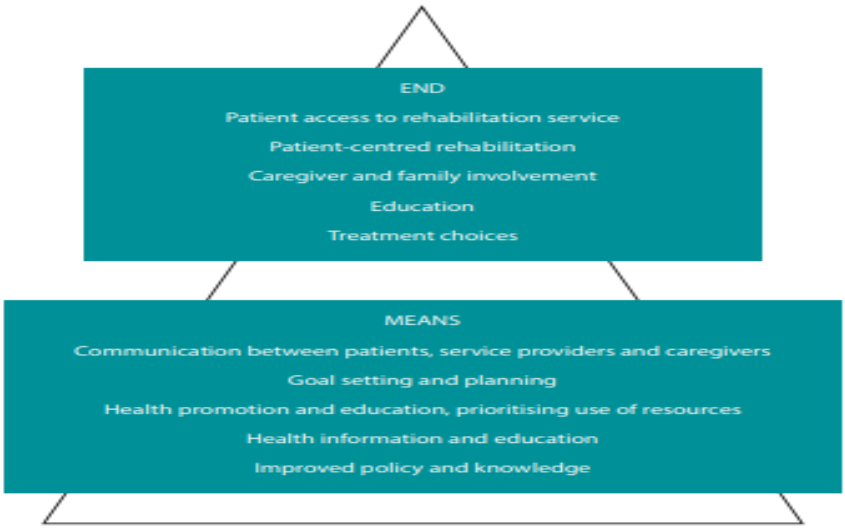

Figure 5.3. Means-to-End Diagram of rehabilitation model

The rehabilitation model considered the challenges faced at PHC level to describe how quality; patient-centred integrated care could be delivered to society. Therefore, in this study, the phases of the rehabilitation model represent the objectives. In addition to the objectives, the rehabilitation model provides the means to achieving utopia. Strategy analysis explores the actions that may lead to the desired results.[13] If the aim of the facility management is to implement an IPP intervention successfully, actions that promote IPP need to be integrated into the facility's current healthcare processes. As the rehabilitation model highlights the objectives of achieving the desired result, it is important to understand how these activities may result in the objectives of the rehabilitation model. Given the contextual differences in the challenges at PHC facilities, it is also important to understand how the activities identified in the review may address the problems at the selected PHC facility. In this study, the strategy analysis component of the analysis stage of the logframe approach was determined through a document analysis of the systematic review. The data collected from the transcripts of the FGDs and the systematic review were analysed deductively.

5.7.3. Data analysis

Analyse your data

As the objectives in the rehabilitation model were intended to improve the quality of healthcare services at a PHC facility, the appropriateness of the objectives at a selected PHC facility needs to be understood. Consequently, the data collected from the document analysis of the FGD were analysed into the five problems as phrased from the objectives of the rehabilitation model.[3] In the means-to-end diagram, the means represent the required change in behaviour, or actions, in order to achieve the objectives. To explore the appropriateness of activities identified in the document analysis of the systematic review, the data were analysed into the six means to achieve the utopia, as highlighted in the rehabilitation model.[3]

Distil your findings

This study was aimed to answer the following research question: How can activities that promote IPP be incorporated into the rehabilitation sector to address contextual challenges at a PHC facility? To answer this main question, the researcher needed to answer the following questions:

- What are the contextual challenges at the selected PHC facility?
- How appropriate are the objectives in the rehabilitation model to address the challenges at a selected PHC facility?
- What activities that promote IPP can be used to achieve the means, as highlighted in the rehabilitation model?

5.8. Results

The document analysis of the transcripts of the FGDs aimed to determine the contextual challenges at the PHC facility, and the appropriateness of the objectives to address the challenges. The document analysis of the systematic review aimed to highlight how the strategies that promote IPP can be incorporated into healthcare practices to achieve the goals of the rehabilitation model. As a part of the problem analysis, the researcher rephrased the objectives of the rehabilitation model to problems (Table 5.2), which are the pre-determined themes for the document analysis of the transcripts of the FGDs.

Table 5.2. Problem analysis of the analysis stage

Objectives	Objectives phased as problems
Patient access to rehabilitation services	Different healthcare processes
Patient-centred rehabilitation	Medical model of care
Caregiver and family involvement	Poor continuum of care
Education	No patient education/ health promotion
Treatment choices	Roles and responsibilities of staff

5.8.1. Contextual challenges at the selected facility

The transcripts of the FGDs documented the perceptions and attitudes of health professionals regarding the implementation of IPP at their PHC facility. The contextual problems highlighted from the transcripts were categorised into five themes, deductively: different healthcare processes; medical model of care; poor continuum of care; no patient education/health promotion; and roles and responsibilities of staff (Fig. 5.4). All problems are supported by quotes from the transcripts of the FGDs.

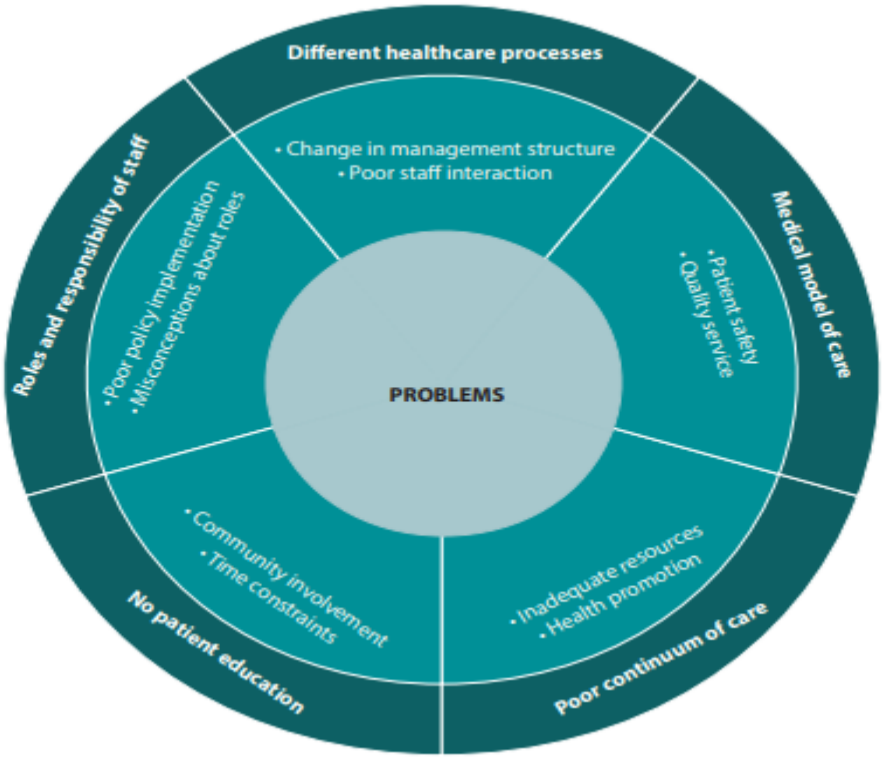

Figure 5.4. Problems of a selected primary health care facility

Different healthcare processes in one facility

The document analysis highlighted the fact that service providers at the selected PHC facility viewed changes in management and poor staff interaction as contributing factors to the various processes of health service delivery in the facility. Facility managers need to build an environment that improves staff relationships, skills and competencies.[14] However, a change in management may result in a shift in approaches aimed at improving healthcare services. One participant stated that, under a previous management, interdepartmental meetings were held to discuss challenges:

'Every unit would be there to be able to meet, you know? And to share ideas. But that with the change of management it fell off.' (FGD2, line 143)

Sometimes changes to management are made at a departmental level, which means that not all departments in the clinic sector of this PHC facility are directly impacted. However, one participant felt that, despite treating the same patient, the changes in management structures resulted in different healthcare processes, thus acting as a barrier to the improvement of the process of care at the facility:

'We serve the same patient, but structures change. In the changing of structures, things get worse not better. There's no progress.' (FGD2, line 160)

Poor interdepartmental interaction may leave departments unaware of changes to health processes in other departments. The second contributing factor to the different healthcare processes at the PHC facility is thus poor staff interaction. Poor staff interaction is worsened by staff shortages, as fewer opportunities for interactions could be created. The Western Cape Department of Health (WCDoH) is committed to allocating more health professionals to low socioeconomic areas to address the higher burden of disease.[14] However, there has not been a change in the allocation of human resources to the facility in the present study, as smaller PHC facilities in the vicinity have the same human resource allocation as the selected PHC facility.

'There is miscommunication, there is a problem. Miscommunication is a huge thing.' (FGD2, line 195)

‘They send the exact same amount of interns to this clinic than they send to the other clinics where they are doing nothing for half of the day.’ (FGD3, line 436)

As the system is constantly undergoing changes, and is inundated with patient numbers, patient access to rehabilitation services is compromised. Improved communication between service providers, patients and caregivers is the expected change in behaviour that may result in increasing patient access to rehabilitation services.[3] Consequently, a need exists to discover activities that would improve communication at PHC level.

Medical model of care

Safe and quality healthcare provision is a national and provincial priority in the SA healthcare system.[14] Healthcare facilities are expected to understand and address patient concerns by locating the diagnosis or condition in relation to the general socioeconomic context of the patient, and managing the condition appropriately and effectively.[14] However, the SA health system uses a medical model of care, which focuses on curative interventions.[15] Currently, the large patient numbers at this PHC facility leave health professionals with limited time to consider context-specific information. One participant explained how neglecting context-specific information might harm the patient:

‘If a doctor queries a fractured neck or femur, I expect that patient to be [on] a bed … Then put that patient in such a way that when I handled that patient, I will not make whatever is there worse.’ (FGD2, line 88)

In the excerpt above, the health professional expressed the opinion that the department in which she is employed does not have access to the resources that other departments have. If patients are referred with specific instructions, the referring health professional has to consider the availability of resources in the department to which (s)he is referring. Given the referral from the doctor, the safest position for the patient would be in a bed. However, when using a medical model of care, the contextual factors of the safest option might not always be considered. To ensure that quality care is delivered, patients need to be treated with dignity and respect, with service providers encouraging their participation through the sharing of health education and information.[14] One participant said that the department in which she is employed has often received referrals from other departments without interaction. The participant explained that, because of the lack of interaction or communication between departments, it was often difficult to understand the reasoning behind the referral. Additionally, the participant disclosed that,

given the diagnostic role of the department in which she is employed, it was assumed that interaction or communication between the departments was unnecessary. If a health professional does not comprehend why (s)he is rendering a service, it follows that any questions the patient might have for that service provider may be left unanswered. Consequently, this implies that the services rendered to the patient would be limited to the referring health professional's understanding of, or bias around, his or her colleagues' disciplines. Health service providers are encouraged to provide comprehensive healthcare to all patients. For as long as a health service provider is spending time figuring out why a referral was made, the patient is not receiving adequate care, and the waiting time for other patients increases. In the excerpt below, the participant explained that the medical model was compromising the services rendered to the population:

'We are unable to give the best services to our clients.' (FGD2, line 170)

Goal setting and planning are required to improve patientcentredness in the rehabilitation sector.[3] Therefore a need exists for the implementation of activities that would improve goal setting and planning.

Poor continuum of care

The aim of the continuum of care is to ensure uninterrupted service delivery for patients.[14] The cohort of caregivers is one of the stakeholders in rehabilitation service delivery.[3] Given the overburdened healthcare system in SA, caregivers and families play a major role in the continuity of care of patients. In addition to human resources, physical resources, such as comprehensive record-keeping systems, accessible medical information and information transfer processes are essential to ensure the continuum of care.[14] At the facility under scrutiny, the current patient information system is paper-based, as the online system is updated infrequently. However, this poses a challenge for health professionals in accessing patient information, as administrative staff resort to creating duplicate folders when they fail to locate the patient's original folder. In these instances, the folders may not have been returned from the various departments, or have been filed erroneously, or the initial patient information was inserted incorrectly. One participant expressed this in the following excerpt:

'If I see a duplicate folder from reception, I go there and say, I want the old one. Because this is a duplicate and I need to retrieve those X-rays.' (FGD2, line 100)

Access to patient records enables health professionals to deliver appropriate care, as these records contain relevant patient assessments and treatment plans. The burden of disease could be managed through disease prevention and health promotion.[14] The health professionals also said that health promotion could be offered telephonically if the patient records contained updated and correct contact details. However, owing to many factors, including the increased patient numbers and the inundated nature of the administration department, patient folders often lack correct contact numbers. In the excerpt below, the participant was asked which alternative methods could be used for patient followup or education, and why they have not been implemented at their facility:

'Or we can actually have working phones and working numbers … But that's because the clerks don't put the right numbers on.' (FGD3, line 351)

Health promotion and education, as well as prioritising the use of resources, encourages caregiver and family involvement in a patient's management.[3] Therefore, it is important to determine the activities that improve health promotion and education, and promote the effective use of available resources.

No patient education

The WCDoH is committed to the promotion of public health education and awareness.[14] However, the health facility under scrutiny services people from outside its jurisdiction, and consequently is faced with increased patient numbers. In order to ensure that health professionals render services to all patients who access this facility, the contact time between patients and professionals is reduced. This constraint on consultation time affects the ability of a health professional to educate the patient effectively and appropriately. There are monthly targets set by district management that require a health service provider to treat a specific number of patients per month. These statistics are recorded daily and interrogated by management. Therefore, staff limit their interaction with patients to ensure that their monthly targets are met:

'… time constrains. I have 6 minutes with a patient … then I get the meds written down.' (FGD3, line 72)

As there is limited time for patient education, there is a need to capacitate community members to assist in the healthcare process. The WCDoH aims to recruit the community into the design of healthcare services.[14] Community involvement is a key factor in the PHC philosophy;[14]

however, at the PHC facility under study, there is poor community integration in health service provision. Health professionals expressed the need for community education, as observed in the excerpt below:

'We also need to involve community. By talking … by inviting the community members to know and then take it back.' (FGD1, line 316)

Activities that promote health information and education, therefore, are needed at the selected facility.

Roles and responsibilities of staff

Interprofessional healthcare teams would develop care processes that involve a single assessment form and intervention planning.[14] At the facility under scrutiny, the limited staff interaction results in a misconception of other health professionals' roles. Consequently, inappropriate referrals result, causing delays or interruptions in healthcare service delivery to patients. One participant expressed her uncertainty around the role of a social worker. Despite this uncertainty, the participant refers patients for social work interventions:

'I don't think most of us know what a social worker can do.' (FGD3, line 111)

The misconceptions around roles may be caused by poor policy implementation. This selected facility falls under the jurisdiction of the Western Cape Province government, which introduced the Healthcare 2030 plan as the blueprint to which health facilities are expected to align their services. Healthcare 2030 aims to provide quality patient-centred healthcare to the population by 2030.[14] According to the participants in the FGDs, these policies are not always implemented:

'But sometimes you've got all the best policies, but somebody needs to apply them.' (FGD4, line 196)

For a patient to make appropriate treatment choices, improved policy knowledge is required.[3] Therefore, it is important firstly to improve the knowledge of health professionals regarding the policies at the facility, to ensure their successful implementation.

5.8.2. Strategies that promote IPP

The strategies identified in the document analysis comprised various activities that promote IPP. The results from the document analysis of the systematic review are presented under the intended outputs of the activity (Fig. 5.5).

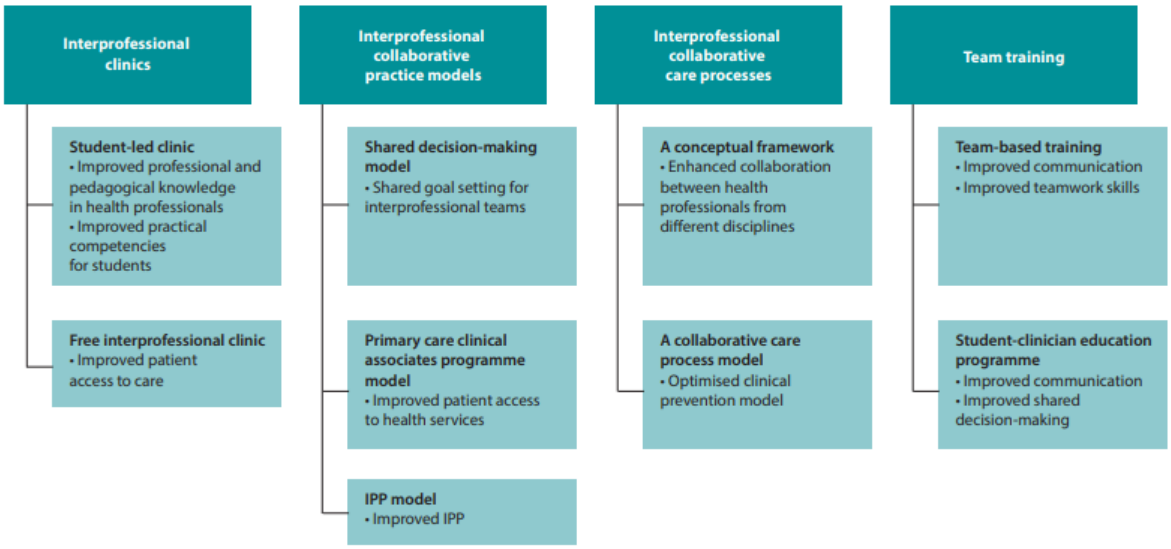

Figure 5.5. Activities that promote interprofessional practice (IPP) at primary healthcare level

Improved interprofessional communication

The document analysis of the systematic review highlighted two activities that improve interprofessional communication, namely team-based training and the student-clinician education programme. In team-based training, in a study by Schentrup et al.,[16] communication and teamwork skills are promoted through fun and informative team-building activities.[16] Team-building activities include the development of personality profiles and case study evaluations. A 3-year team-based training programme is described, which involves fortnightly interprofessional meetings, as well as reinforcement meetings every 6 months, conducted by an interprofessional facilitator.[16] As part of a student-clinician education programme in the activities highlighted in the systematic review analysis, short, regular meetings such as daily huddles and team visits are used as opportunities for health professionals to discuss collaborative care plans.[17] In order to sustain IPP, there needs to be synergy between health professions education and health workforce planning. Nagelkerk et al. [17] describe an IPP education programme involving both students and qualified health professionals. The programme teaches health professionals and students the concepts of IPP,

to improve communication, shared decision-making and patient outcomes.[17] The programme resulted in an increased knowledge of IPP for the participants. Additional studies in the systematic review emphasised the importance of interprofessional meetings to improve interaction among staff members. It is important to determine how these activities align to the phases in the rehabilitation model,[3] which could be used to address the challenges highlighted in the document analysis of the FGDs.

Shared decision-making

Two studies highlighted main activities that aimed to improve shared decision-making at PHC level. An interprofessional shared decision-making model, consisting of smaller activities, promoted patient-centred care.[18] The smaller activities used in the shared decision-making model included active patient education and information-sharing among health professionals.[18] The student clinician education programme, described in the review, promotes shared decision-making, as it encourages health professionals to develop collaborative care plans in interprofessional teams.[17]

Improved health service practices

Four studies described main activities that resulted in improved skills related to practical competencies,[19] collaboration,[20] teamwork[16] and IPP.[21] Student-led clinics involve the interprofessional assessment and treatment of patients in an outpatient setting.[19] Pre- and post-consultation meetings allow students to discuss patient plans with qualified health professionals. The advantage of student-led clinics is two-fold: students are exposed to an authentic IPP experience, and health professionals enhance their leadership skills.[19] Informal and formal meetings, such as workshops and seminars, are aimed at knowledge sharing and informing evidence-based patient care.[20] The meetings are scheduled quarterly to combat the inundated schedules of health professionals.[20] Team-building activities were used to improve teamwork skills.[16] Based on the current healthcare process and the contextual barriers at the selected facility, an interprofessional process model to improve interprofessional healthcare delivery was required.[21]

Enhanced co-ordination of care and patient-centredness

The document analysis of the systematic review analysed in this study highlighted one main activity that promotes the co-ordination of care and patient-centredness. The primary-care clinical associates (CA) programme is a capacity-development programme that is aimed at

improving the skills and knowledge of a health professional from any discipline.[22] This programme promotes IPP in clinics as the CA collaborate with health professionals in the facility to develop collaborative care plans.[22]

Improved patient access

The systematic review emphasised two activities that promote patient access to health services, namely an interprofessional clinic, and a primary care clinical associate programme. In an interprofessional clinic, regular interactions between health professions allowed the development of IPP and the interprofessional education core competencies.[23] In addition to promoting IPP, the CA programme uses teamwork to increase patient access to PHC.[22]

5.9. Discussion

The Healthcare 2030 plan highlights interprofessional teams as the key stakeholders in the development of health processes.[14] The development of interprofessional teams, therefore, addresses the challenges at the PHC facility under scrutiny. It is important to highlight how the proposed IPP activities could be incorporated into the rehabilitation sector at PHC level, to address the contextual challenges.

5.9.1. Different healthcare processes in one facility

While change of management in health systems is inevitable, IPP promotes staff interaction that will ensure that all service providers are aware of any changes to the healthcare processes. The document analysis of the systematic review highlighted the importance of developing an IPP model. [18,22,21] By incorporating IPP into the rehabilitation model, the model could be implemented in the rehabilitation sector at PHC level. Therefore, it is important to emphasise how the activities highlighted in the document analysis of the systematic review in the present study could be incorporated into a rehabilitation model, to address the challenges highlighted at a selected facility.

5.9.2. Medical model of care

The rehabilitation model suggests a patient-centred approach to healthcare. Patient-centred care is the engagement between health professionals and patients in the planning and implementation of healthcare services, to achieve a specified goal.[24] IPP encourages patient, family and caregiver involvement in assessment and interventions, to promote patient-centred care.[25] Patient, family and caregiver involvement in improvement of care, therefore, allows for a shift from a medical model of care to a patientcentred model. According to the means-to-

end diagram (Fig. 2), to achieve patient-centred care, there needs to be goal setting and planning. The document analysis of the systematic review revealed one interprofessional activity that was aimed at promoting goal setting and planning. In the primary care CA programme, the CAs collaborate with health professionals in the facility to develop collaborative care plans.[22]

5.9.3. Poor continuum of care

A poor continuum of care results from inadequate use of resources, and no health promotion.[3] In the rehabilitation model, the prioritising of resources, as well as health promotion, results in caregiver and family involvement. The document analysis of the systematic review highlighted caregiver and family involvement in patient consultation as an interprofessional activity that would promote health promotion and education. As caregivers and families play a role in the decision-making of the patient, they are regarded as a resource in the delivery of quality health services.[21] The inclusion of patients and caregivers, therefore, ensures the effective use of this important human resource, and the feasibility of the process of care in IPP.

5.9.4. No patient education

The document analysis highlighted two activities that promote the effective use of resources, namely active patient education, and information sharing among health professionals. Physical resources, such as patient information systems, are important to consider, if the aim of the government is to provide quality health services.[18] The rehabilitation model suggests that health information and sharing leads to effective education. Discipline-specific biases may influence how a health professional conducts a patient assessment; however, the assessment process could be duplicated when the roles of professionals overlap. Therefore, shared assessment forms could be used to avoid the duplication of assessments,[21] as the use of a shared assessment form ensures that the information required by each professional is collected during the initial assessment. The development and implementation of a shared patient assessment form would ensure that all health professionals have access to the relevant patient information. Given the human resource shortages, health professionals are faced with limited time to conduct patient consultations. Increasing available human resources is essential if the aim of management is to allocate additional time for goal setting and planning in patient consultations.

5.9.5. Roles and responsibilities of staff

In order to provide patients with treatment choices, improved policy knowledge is required.[3] The document analysis revealed two additional activities that enhance treatment choice, namely interprofessional clinics and collaborative care processes. Interprofessional clinics promote a shared understanding of IPP. In the clinics, health professionals developed an understanding of interprofessional collaboration and practice within their context. Consequently, this could promote the knowledge and understanding of active policies, as health professionals are constantly interacting with one another about patient management. Collaborative care processes provide health professionals with co-ordinated practices.[21] The document analysis highlighted one activity that encouraged prevention practices, in response to certain conditions.[26] An understanding of the healthcare setting, hierarchical structures and organisational factors is important, as IPP involves amalgamation of various health professionals' roles.[27] Therefore, it is important to investigate the resources at the facility, as well as how IPP could influence the current health processes. Once there is a clear understanding of the way the resources at the facility will allow for the successful integration of activities, IPP activity guidelines could be developed in each phase of a rehabilitation model.

5.10. Conclusion

In this study, the document analysis of the FGDs and the systematic review highlighted the challenges at a selected PHC facility, the appropriateness of the rehabilitation model to address these challenges and the activities that promote IPP at PHC level. The challenges align with problems deduced from the objectives in the rehabilitation model by Mlenzana and Frantz.[3] This alignment implies that the rehabilitation model will be appropriate to address the current challenges. In addition, document analysis allowed the researchers to identify strategies to address the contextual challenges. These strategies are the actions needed to execute every phase successfully.

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5.12. Summary

The logical framework (logframe) approach's analysis stage was completed in this chapter. The researcher was able to create a situational analysis of the PHC institution they had chosen for this study by using data triangulation for the data gathered in earlier chapters. The focus group discussion and systematic review transcripts were systematically examined by the researcher using the READ approach. In order to assess how the activities listed in chapter 4 can be used to solve the contextual challenges mentioned in chapter 3 the data was triangulated.

The planning stage of the logframe approach is carried out in the next chapter. It becomes clear what data must be gathered in order to complete the last step of the logframe approach as the information gathered in chapter 4 is plotted into the logframe matrix.

CHAPTER SIX

STAGE 2: PHASE 4: THE DEVELOPMENT AND FEASIBILITY OF GUIDELINES THAT PROMOTE INTERPROFESSIONAL PRACTICE IN THE REHABILITATION SECTOR AT THE PRIMARY HEALTH CARE LEVEL USING A DELPHI STUDY

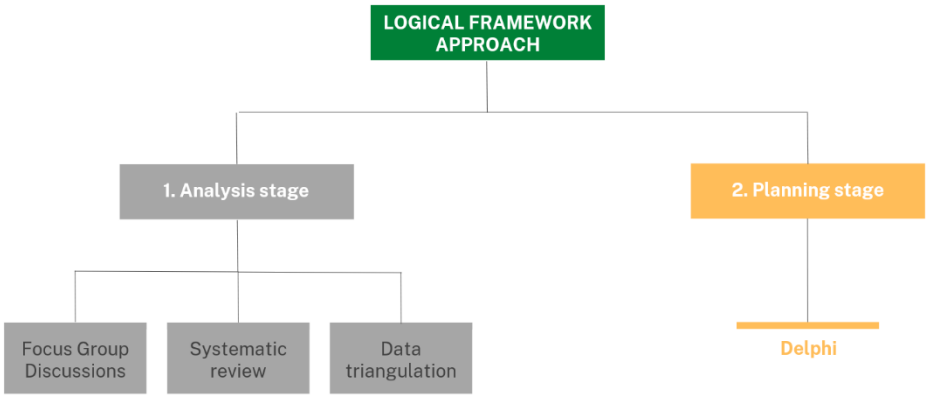

Figure 6.1: PHASE 4 of logical framework approach: a Delphi study

6.1. Introduction

In the previous chapter, the triangulation of data from the analysis phase of the logical framework (logframe) approach was described in detail. In the development of the logframe matrix, the analysis stage's summary uncovered missing data. To complete the subsequent phase of the logframe methodology, known as the planning phase, additional data collection is required. This chapter presents the findings of the Delphi study, which aims to develop guidelines that incorporate IPP principles in the rehabilitation sector at the PHC level (Article 4).

6.2. Publication details

Article 4 has been submitted to the International Journal of Environmental Research and Public Health. Details of the article are provided in Table 6.1.

Table 6.1: Article details

Title	**Interprofessional practice activity guidelines to be incorporated into rehabilitation services at primary health care level**
Authors	Kock, L., Frantz, J., Mlenzana, N.
Year	
Journal	International Journal of Environmental Research and Public Health
Volume	
Issue	
Page no.	
Status	Revisions required, resubmitted for review October 2022
Full citation	

6.3. Journal overview

The manuscript was published in the International Journal of Environmental Research and Public Health. This peer-reviewed journal focuses on the interrelatedness of environmental health and the quality of life, while considering the various factors such as public health that influence these aspects.

6.4. Published article

Interprofessional Practice Guidelines to be Incorporated into Rehabilitation Services at Primary Health Care Level

6.5. Abstract

A rehabilitation model was developed to educate health professionals on how rehabilitation services should present. However, interprofessional practice was not taken into consideration. This study aims to develop guidelines that incorporate interprofessional practice principles into the rehabilitation model for primary health care level. The Delphi technique was used to

develop the guidelines. Experts in the fields of rehabilitation, primary health care, and interprofessional practice, were approached to participate in the study. The feedback from 15 participants in the first round of open-ended questions was used to develop a 5-point Likert scale, which formed the basis of the second round of the study. The consensus and median were used to determine consensus among the panel of experts. In the first round, the experts identified 26 guidelines. In the second round, the experts reached convergence of opinion on the guidelines. 25 guidelines reached a 70% consensus rate. One guideline had a less than 70% consensus rate but was included as it had a median of higher than 3.24. The median results for each guideline were higher than 3.24. These guidelines were aligned to the interprofessional core competencies. Therefore, demonstrating that these guidelines will support interprofessional practice principles among health service providers when included into rehabilitation services at the primary health care level.

Keywords: interprofessional practice; primary health care; clinical practice guidelines; rehabilitation

6.6. Introduction

A rehabilitation model was developed to ensure a patient-centred approach to patient management in the rehabilitation sector at primary health care (PHC) level [1]. This model comprised five phases, which could be viewed as the objectives to achieving the main goal of the model [1]. In addition, the model included five means to achieving the various objectives in each phase of the model [1]. Given the information on the model, it evidently fails to address the activities required in every phase, to operationalize the model successfully. As a result, activities were identified at each phase of the rehabilitation model [2]. These activities used interprofessional practice (IPP) principles to ensure the successful implementation of the phases into the rehabilitation sector at PHC level [2].

IPP activities are incorporated into clinical practice to improve collaboration between health service providers, as well as the quality of patient care [3]. However, given the wide range of health service providers and clinical settings used in studies, and the minimal use of theory, these IPP activities have been poorly conceptualized [3]. An additional challenge at a South African PHC facility is that health service providers are unable to define IPP, and consequently,

are unfamiliar with IPP [4]. This implies that, without guidelines, the successful implementation of these activities may be compromised. If the IPP activities are considered the operationalization of the rehabilitation model into the rehabilitation sector at PHC level, it is evident that there are inadequacies pertaining to the operationalization of the model. As the health service providers' understanding of IPP may not have changed, merely suggesting activities may not result in the intended outcome. Consequently, it became necessary to provide health service providers at PHC level with guidelines to incorporate the activities into rehabilitation practice.

Guidelines provide health service providers with evidence-based recommendations that assist them in effective decision-making about patient interventions [5]. In addition, guideline development plays a pivotal role in improving the quality and appropriateness of care [6]. Guidelines have been used to address specific conditions [7], promote patient's rights [8], and in specific areas of healthcare [9]. Therefore, it is suggested that, because of the increasing international research and knowledge, local researchers should update, adopt, adapt, and implement practice guidelines [10]. If the rehabilitation sector at PHC level is to ensure patient-centred care, health service providers require recommendations on how to adapt their practice to meet the objectives of the rehabilitation model.

However, guidelines are not applicable to every clinical setting [9]. Health service providers in the rehabilitation sector at PHC facilities are faced with unique challenges, which include hierarchical structures, logistical challenges, infrastructural barriers, time constraints, and administration [4]. Therefore, it is important to consider the contextual challenges, when developing guidelines. Consequently, the aim of this study is to develop guidelines that incorporate IPP core principles, to assist health service providers in operationalizing the rehabilitation model into the PHC level. Therefore, when guidelines for activities that promote IPP are considered, it is important to consider whether those guidelines appropriately promote the IPP core competencies. Four interprofessional core competencies have been identified as the expected aptitude that health service providers require to work in an interprofessional team [15]. The four core competencies are: i) values/ethics; ii) roles/responsibilities; iii) interprofessional communication; and iv) teams and teamwork. These interprofessional core competencies do not replace the discipline-specific skills and knowledge [15]; they serve as the foundation for lifelong learning in interprofessional development [16].

6.7. Materials and Method

6.7.1. Research Design

The research design falls under the umbrella of consensus-building methods, which are appropriate for investigations with scant evidence [13]. The Delphi technique is used to garner the input of specialists in a specialized area [11]. Each round of the Delphi study is informed by the data collected in the previous round. As no group meeting is held in a Delphi study, social pressures where some participants of the group dominate the discussion, does not influence the opinions of the participants. In this study, the Delphi study was used to garner the input of a diverse range of experts regarding the guidelines of activities that could promote IPP at PHC level.

6.7.2. Population and Sampling

According to Hsu and Sandford [11], no specific criterion exists for the participants, except that they should be selected based on their experience, and background, related to the topic. As the sustainability of IPP relies on the synergy between health workforce planning and health professions education [12], it is important to involve participants with a diverse range of expertise. Non-probability sampling was used to select the participants for this study. In this study, the researcher invited 20 individuals: i) with a health or social science tertiary qualification, ii) employed in the health or higher education section, and iii) who were knowledgeable in PHC, rehabilitation, and IPP. The first round of the Delphi was completed by 15 experts. In the second round, there was an attrition rate of 26%, which resulted in 11 experts participating.

6.7.3. Data Collection Procedure

Twenty participants were invited to participate in the Delphi study *via* email. Once prospective participants consented to participate in the study, they were sent a link to a Google Form to complete the first round of the study. In the first round, the researcher aimed to collect information regarding the area, by posing open-ended questions [11]. The participants were to comment on the feasibility of including certain interprofessional activities into the rehabilitation sector at a South African PHC facility. The open-ended questions were based on the phases of the rehabilitation model [1], and the interprofessional activities that would promote IPP in each phase (Figure 6.2).

Figure 6.2. The activities that will promote interprofessional practice at phases of an existing rehabilitation model.

The responses from the first round were used to develop a 5-point Likert scale questionnaire, which ranged from strongly agree to strongly disagree. The participants were sent an additional link to a Google Form to complete the second round of the study.

6.7.4. Data Analysis

According to Hsu and Sandford [11], researchers need to find a suitable method to analyse qualitative information. In the first round of the Delphi study, the responses from the Google Form are downloadable for analysis. The researcher read each participant's answers separately and made notes in the margins. Using the notes, the researcher used a deductive method of analysis to identify the guidelines to the activities that promote IPP at PHC level. The emerging guidelines were used to develop the questionnaire for the second round of data collection.

In the second round of the Delphi, the guidelines were rated, using a 5-point Likert scale with the following ratings: (1) Strongly disagree, (2) Disagree, (3) Not sure, (4) Agree, and (5) Strongly agree. These ratings were used to determine consensus among the panel of experts. Given the low number of participants, a complex statistical analysis was not necessary.

The 5-point Likert scale was dichotomised into three categories: non-consensus, comprising the "Strongly disagree" and "Disagree" ratings; consensus, comprising the "Strongly agree" and "Agree" ratings; and "Not sure." For consensus to be reached, the ratings within a category

needed to be at least 70% of the responses [13]. A median of 3.24 or higher, measures central tendency [14], which, according to Hsu and Sandford [11], best reflects the convergence of opinion among a panel of participants.

6.8. Results

6.8.1. Characteristics of Participants

Fifteen experts participated in this study. Table 6.2 contains the professions of the experts, their area of expertise, and years of experience in the field. Participants were allowed to select more than one option when indicating their area of expertise.

Table 6.2. Characteristics of participants.

Characteristic	Category	Number
Profession	Interprofessional education	1
	Nursing	3
	Occupational therapy	3
	Health professions education	1
	Psychology	3
	Physiotherapy	2
	Doctor	2
Area of expertise	Interprofessional education	11
	Primary health care	11
	Rehabilitation	5
Years of experience	Less than 5 years	2
	5 – 10 years	5
	More than 10 years	8

6.8.2. Main Findings

In the first round, the participants answered open-ended questions to develop guidelines for the activities that promote IPP in the phases of the rehabilitation model by Mlenzana and Frantz [4]. The participants were expected to comment on how these activities could be incorporated into the rehabilitation services at PHC level. In the second round, the participants rated the guidelines highlighted in round one, using a Likert scale. The findings from the two phases are

presented under the activities that promote IPP in every phase of the rehabilitation model (Table 6.3)

Table 6.3. Guidelines for activities that promote IPP

Guidelines	Range	Consensus	Mean	Median
Tick list of services available at the facility				
1. Interprofessional discussions	3–5	91	5	4.55
2. All staff must develop the tick list	4–5	100	5	4.55
3. Tick list must be written in a culturally appropriate language style	3–5	82	5	4.36
4. List all the services at the facility	3–5	91	5	4.64
5. Highlight the medical needs of the patient	4–5	100	5	4.82
Shared patient assessment form				
1. Discuss roles of represented staff	4–5	100	5	4.82
2. Identifies overlapping roles	2–5	82	5	4.55
3. All staff must develop the form	3–5	91	5	4.55
4. Avoid discipline-specific jargon	4–5	100	5	4.45
5. Captures patient's current condition and progress	4–5	100	5	4.91
Student-clinician education program				
1. Collaborate with local higher education institutions	2–5	82	5	4.27
2. Higher education institutions to place students in IP teams	4–5	100	5	4.64
3. Weekly student presentations on specific patient cases	3–5	91	5	4.45
4. Student-clinician discussions to develop collaborative care plans	4–5	100	5	4.73
Caregiver/family consultations				
1. Decide on conditions to include	2–5	64	4	3.60

2. Involve rehab care worker (if no family member present)	4–5	100	4	4.45
3. Space for family/ caregiver feedback in patient folder	4–5	100	5	4.73
Shared decision-making				
1. Choose the virtual meeting space (e.g., apps)	3–5	82	4	3.91
2. Develop SDM stationery	3–5	91	5	4.45
3. Develop collaborative goals for patients	4–5	100	5	4.91
4. Include patients in decision-making	4–5	100	5	4.91
5. Include SDM on tick list to show it has been done	4–5	100	5	4.91
Regular meetings				
1. Set dates and times in advance	3–5	91	5	4.55
2. Decide on virtual/ face-to-face meetings	4–5	100	5	4.82
3. Develop role clarification pamphlets	3–5	91	5	4.55
4. Collaborate with staff according to roles	3–5	91	5	4.64

Tick List of Services for Each Patient entering a PHC Facility at First Point of Contact

Experts expressed that the implementation of a tick list of services would serve as a reminder to health service providers, regarding the rehabilitation services available at the health facility, and would provide a holistic view of the health needs of the patient. A set of five guidelines were developed by the experts in the first round of data collection. The general view was that, using the guidelines to implement the tick list, would be a good inclusion into rehabilitation services.

Based on the guidelines identified in round 1, the participants were requested to rate these guidelines in the second round. In the second round, the participants reached consensus that all five guidelines would assist health service providers to successfully implement the tick list in the rehabilitation sector at PHC level. However, additional comments about this activity suggest that the patients' needs, addressed by the services in the tick list, not only covered their medical needs, but all dimensions of their health.

Shared Patient Assessment Form

The participants agreed that the implementation of this activity would improve efficiency and save time, as it would provide service providers with a comprehensive clinical picture of the patient's health needs. One participant expressed that, given the benefits thereof, the shared patient assessment form should be implemented in all sectors at PHC level. Experts highlighted five guidelines in round 1, to develop and implement a shared patient assessment form, and in round 2, consensus was reached.

According to the experts in this study, a shared assessment form could be developed from existing frameworks, where tools such as the International Classification of Functioning, Disability and Health are used as a basis for the development of a shared patient assessment tool. One participant highlighted the importance of referring to "roles and responsibilities", as opposed to merely the roles of staff.

Student-Clinician Education Programme

The experts expressed the important role of students in the healthcare processes of patients. In addition, they highlighted the value of placing students in interprofessional teams, when allocated into the rehabilitation sector at these facilities. In Table 6.3, a set of four guidelines, identified by the experts, for the successful implementation of the student-clinician education programme, is presented, and consensus was reached.

The experts suggested additional collaboration between the Department of Health and other sectors, including the Department of Social Development and the Department of Education.

Caregiver/Family Consultations

According to the experts in this study, caregiver/family involvement in the patient consultations is important, as it allows for the continuation of care. In addition, the experts expressed that caregivers/families provide context-specific information for the patient, which would assist service providers to provide patients with appropriate comprehensive care. A set of three guidelines were highlighted by the experts for the successful implementation of caregiver/family consultations in the rehabilitation sector at PHC level.

In the following round, the experts were required to rate the three guidelines. In the first guideline, consensus was not reached, which involved the decision to select certain or predominant conditions to include. However, there was a convergence of opinion among the experts as the median for the first guideline was higher than 3.24. As mentioned previously, the median measures the convergence of opinion better than the consensus [5]. The guideline, therefore, was included in the final set of guidelines for caregiver/family consultations.

Shared Decision-Making

The experts highlighted two important aspects in shared decision-making, including the benefits of collaboration, and patient's involvement in decisions related to their own care. According to one expert, collaborative goal setting sessions would assist in shared decision-making, which needed to be revised, as the patients' conditions change continually. Five guidelines were developed to incorporate shared decision-making into the rehabilitation sector at PHC level.

There was general consensus around the five guidelines highlighted by the experts. They expressed that besides involving patients in the decision-making process, patients should be educated regarding their condition. According to the experts, improving a patient's understanding of his/her diagnosis and prognosis, would assist him/her to offer valuable contributions to the shared decision-making process.

Regular Meetings

Regarding the incorporation of regular meetings into rehabilitation services at PHC level, the experts expressed two equally important aspects. Firstly, they highlighted the benefit of short, regular, and focused meetings. The second aspect was that online platforms should be explored as an alternative to face-to-face platforms. However, the second aspect should be at the discretion of the service providers at the facility. Four guidelines were highlighted by the experts.

There was general consensus around the guidelines to implement regular meetings. Two experts highlighted the need to have structured agendas for the regular meetings. A different

expert mentioned the incorporation of case managers. However, given the unpredictability of the PHC sector, another expert highlighted that too much structure around how staff should collaborate, could revert to a uni-professional approach.

6.9. Discussion

The aim of this study was to develop guidelines that incorporate IPP core principles into the rehabilitation sector at PHC level. As the development of these guidelines align to the rehabilitation model of Mlenzana and Frantz [1], and guidelines provide recommendations to practice, the development of guidelines could be used to ensure patient-centred interventions in the rehabilitation sector at PHC level. The experts reached consensus around the developed guidelines; however, it is important to determine how these guidelines relate to the IPP core principles, as highlighted by the Interprofessional Education Collaborative (IPEC) [15]. Each one of the core competency domains is described through a range of sub-competencies [15]. In this discussion, the guidelines developed by experts are matched to the sub-competencies, to showcase how the interprofessional core competency is strengthened.

6.9.1. Values/Ethics

The values/ethics (VE) core competency domain expects health service providers to work with individuals from different professional backgrounds, while maintaining respect and upholding shared values [15]. This domain has 10 sub-competencies that health professionals are expected to demonstrate [15]. In this Delphi study, seven of the 26 guidelines developed by the experts, developed, or enhanced the VE core competency (Figure 6.3).

IPE CORE COMPETENCY	ACTIVITY	GUIDELINE	IPE SUBCOMPETENCY

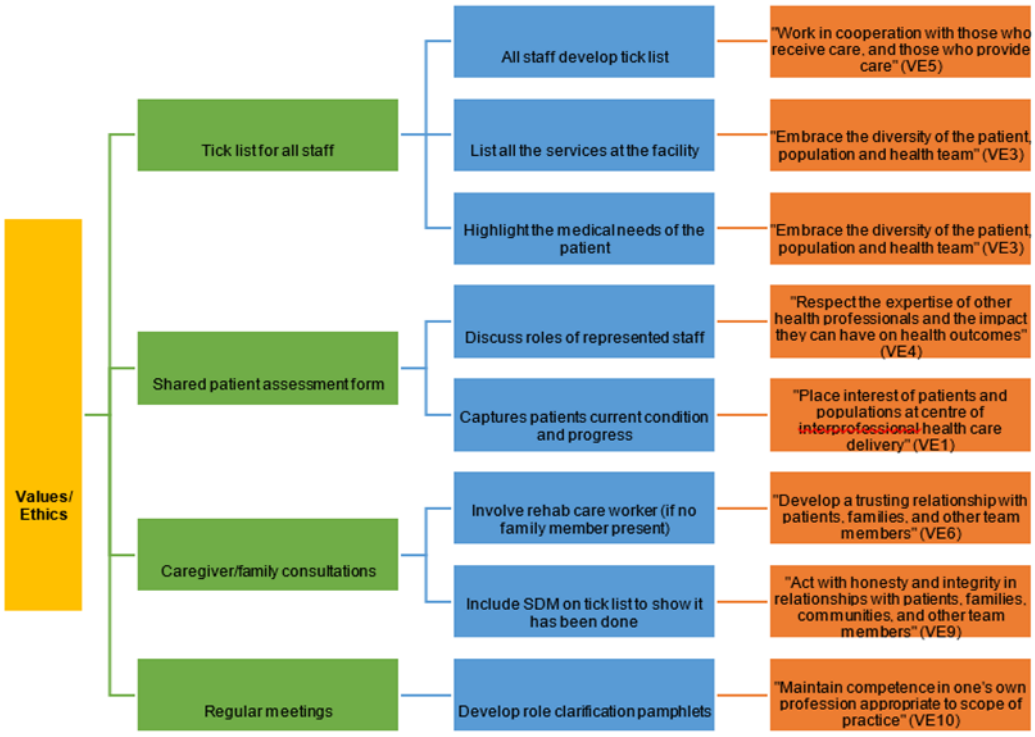

Figure 6.3. Guidelines that promote values/ethics interprofessional core competency.

The guidelines developed by the experts align to the sub-competencies of the VE core competency. Consequently, this competency is strengthened through the application of these guidelines. In practice, successful implementation of interprofessional ethics develops a shared goal of patient/client/community-centred quality care among health professionals [17]. Health service providers at a PHC facility were resistant to the implementation of IPP at their PHC, because of a lack of patient follow-up in their current practice [4]. However, the development of this core competency could encourage healthcare teams to develop shared patient goals, which implies that, despite follow-up from one discipline, the patient's goals could still be achieved.

6.9.2. Roles/Responsibilities

The roles/responsibilities (RR) domain is the ability of a professional to use knowledge of their own role, as well as the role of individuals from different professional backgrounds, to assess and manage the health needs of a patient [15]. This domain comprises 10 sub-competencies, which service providers are required to demonstrate in practice. Seven of the guidelines

developed by the experts in this study matched the sub-competencies in the RR domain (Figure 6.4).

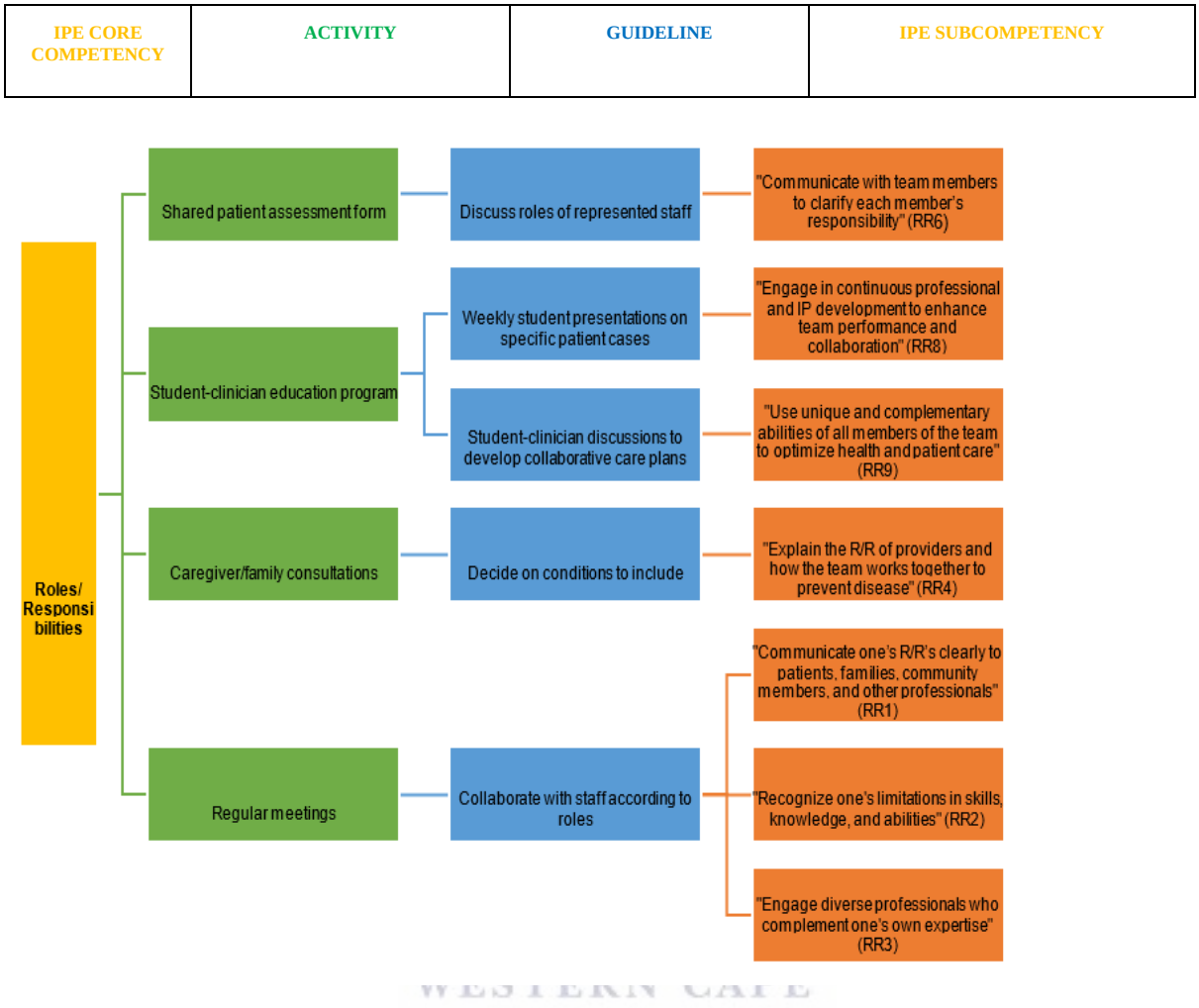

Figure 6.4. Guidelines that promote roles/responsibilities interprofessional core competency.

It is evident that the R/R core competency would be developed and strengthened, should health professionals adopt the guidelines into practice. In practice, improved R/R assist health service providers to meet their patients' health needs, maximising health service providers' time, and distributing workloads [18]. One of the reasons for the lack of implementation of IPP at a South African PHC facility, is time constraints [4]. The incorporation of these guidelines, therefore, would not only improve the R/R core competency in the health service providers, but it could also address the challenges at this PHC facility.

6.9.3. Interprofessional Communication

The interprofessional communication (CC) domain emphasises the ability of service providers to communicate with all stakeholders in the health and other sectors, to support health

promotion, as well as disease prevention and treatment through teamwork [15]. This domain is upheld by eight sub-competencies related to communication. In this study, the experts highlighted six guidelines that aligned to the sub-competencies in this domain (Figure 6.5).

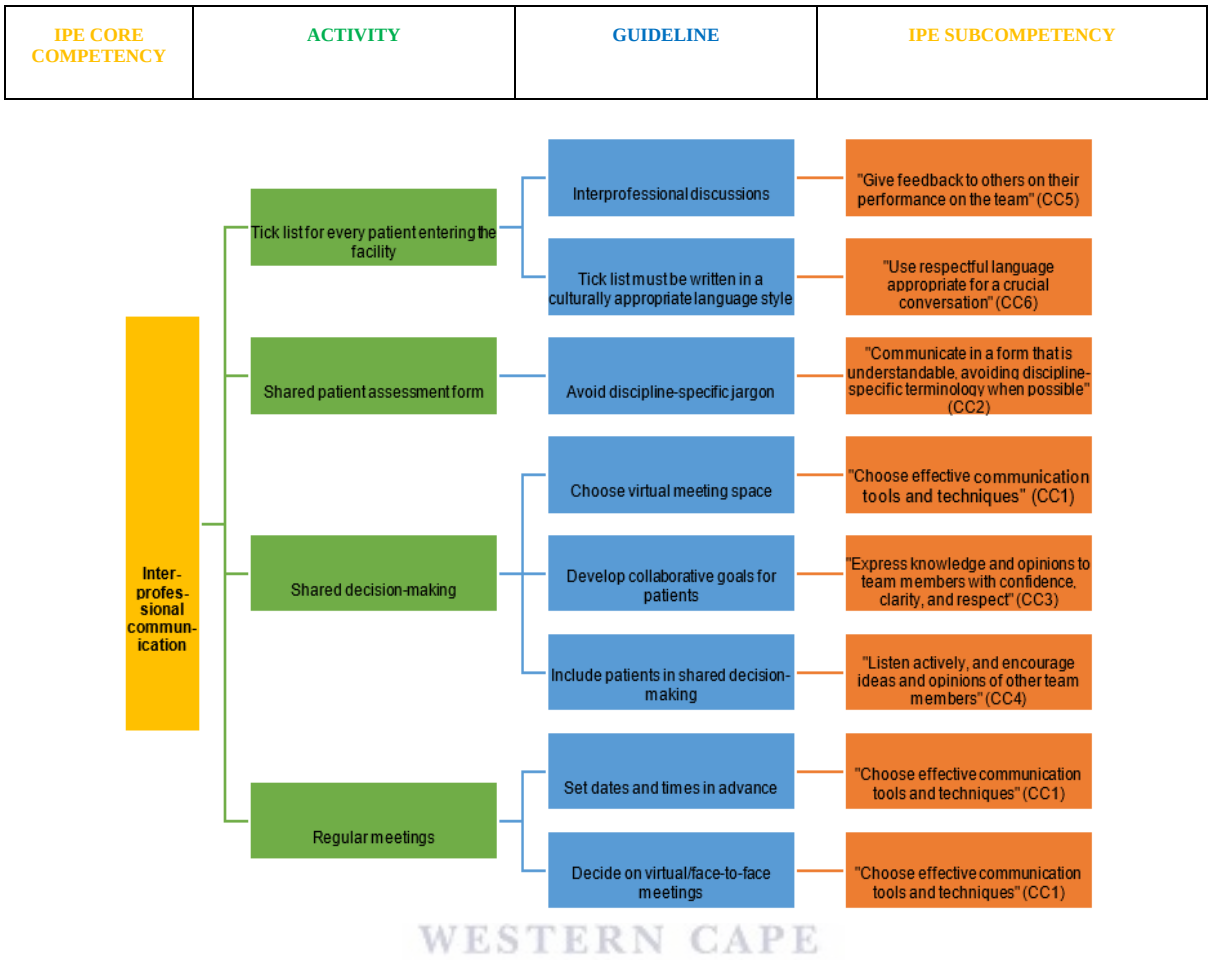

Figure 6.5. Guidelines that promote interprofessional communication core competency.

Poor communication in healthcare may result in delayed patient management, misdiagnoses, increased medical errors, or patient death [19]. Generally, health professionals acknowledge the interprofessional differences among team members, including the diversity in health professions education, language barriers, and poor role clarity [19]. However, challenges to interprofessional communication persist in practice [19]. In a South African PHC facility, logistics and infrastructural barriers hinder the successful communication between health service providers [4]. The incorporation of the proposed guidelines provides clear recommendations regarding how the sub-competencies of the CC core competency domain could be achieved. These guidelines offer solutions to challenges faced at the PHC facility, and therefore, improve interprofessional communication among the health service providers.

6.9.4. Teams and Teamwork

The final competency domain is teams and teamwork (TT), which is described as the health professional's ability to apply values and principles of relationship-building and teamwork to plan, provide, and evaluate patient-centred care in a collaborative manner [15]. This domain comprises 11 sub-competencies, six of which have been covered in the guidelines developed by the experts in this study (Figure 6.6).

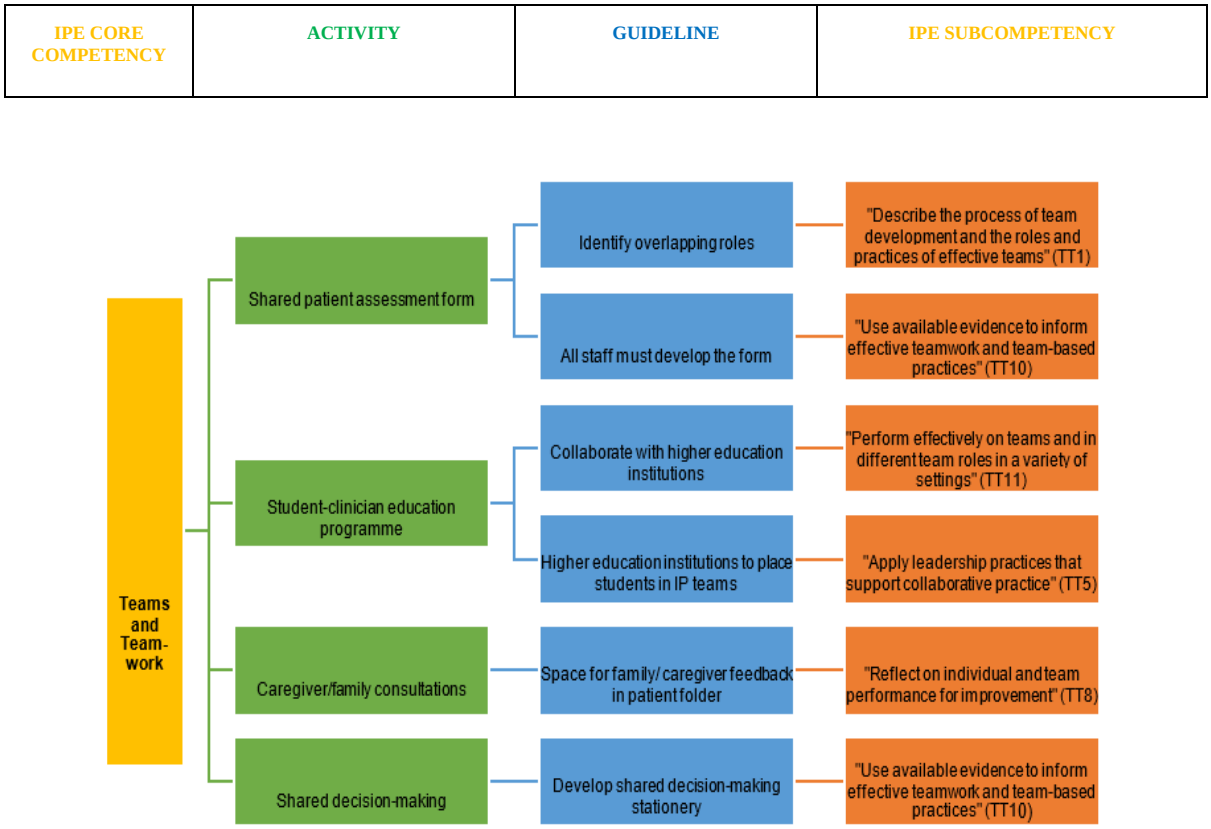

Figure 6.6. Guidelines that promote teams and teamwork interprofessional core competency.

Effective teamwork among health service providers, patients/clients, families, and communities, avoids inadequacies in treatment and redundancies, and increases effectiveness and efficiency [18]. The incorporation of these guidelines into clinical practice could develop or enhance the teamwork core competency among health service providers, and consequently, improve the effectiveness of the services rendered to patients.

6.10. Conclusion

Based on the results, the activity guidelines to promote IPP in the rehabilitation sector at PHC level, align to the sub-competencies set out by the IPEC. As the application of the sub-

competencies strengthen the interprofessional core competencies, the incorporation of these guidelines would ensure that quality, patient-centred rehabilitation services would be rendered to the population. Therefore, the guidelines developed by the experts in this study, serve as an operational plan for the successful implementation of rehabilitation model at PHC level.

Although the guidelines, developed in this study, did not align to all the sub-competencies under each domain, this study creates the platform to initiate the transition to an interprofessional model of health care. The authors recognize that a larger cohort of participants from a wider range of professions may have yielded a richer data set. Upon implementation of these guidelines, health service providers may identify additional activities and guidelines, which could promote the outstanding sub-competencies for *Values/Ethics* (VE2, VE7 and VE8), *Roles/Responsibilities* (RR5, RR7 and RR10), *Interprofessional Communication* (CC7 and CC8), and *Teams and Teamwork* (TT2, TT3, TT4, TT6, TT7 and TT9).

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6.12. Summary

This chapter describes a Delphi study that aimed to develop guidelines for the incorporation of IPP principles in the rehabilitation sector at the PHC level. Using the items highlighted by the panel of experts in the initial round of the Delphi study, a Likert scale was developed. Using the Likert scale, experts' consensus on the feasibility of each item in the rehabilitation sector at the PHC level was determined. On all points, consensus was reached. The items corresponded to the IPP sub-competencies. Therefore, these are the guidelines that incorporate IPP principles into the rehabilitation sector at the level of PHC. These chapter's findings can be used to complete the logframe matrix's missing information.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATIONS

7.1. Overview summary of significant findings

In this chapter, the researcher summarises the findings from the four studies in this thesis, to gain an understanding of the results from the development of guidelines that incorporate interprofessional practice (IPP) principles into the rehabilitation sector at primary health care (PHC) level. The main aim of Chapter three was to explore the perceptions, attitudes, and understanding of health professionals for IPP at a selected PHC facility. In Chapter four, the researcher conducted a systematic review of literature to describe the activities required to promote IPP among health professionals at PHC level. In Chapter five, the researcher triangulates the data collected in the previous chapters to determine how the activities and the existing rehabilitation model could be used to address the problems at a selected PHC facility. In Chapter six, the insights of experts are used to develop and determine the feasibility of the guidelines to incorporate IPP activities into the rehabilitation sector at PHC level.

Finally, in this chapter, the researcher discusses the implications of the findings of this thesis and expands on the limitations of and recommendations from this study.

7.2. Summary of significant findings

The findings presented in the chapters of this thesis contribute to the development of guidelines that incorporate IPP core principles into the rehabilitation sector at PHC level. In each chapter, an objective is presented that attempts to achieve the overall aim of the study. The two stages of the logical framework (logframe) approach, namely the analysis and planning stages, were used to determine the study's objectives in order to achieve the study aim. The first three objectives comprised the analysis stage, while the last objective represented the planning stage.

7.2.1. Objective 1: Explore and describe the perceptions, attitudes, and understanding of health services providers for IPP at a selected PHC facility

The findings from this aspect of the study highlighted that health service providers at the facilities were unable to define IPP, which they attempted to understand, using the terminology

associated with a multidisciplinary approach to patient management. However, as the participants discussed the current situation at their facility, it was clear that there were contextual barriers to the successful implementation of IPP at the selected facility. In addition, based on their poor understanding of IPP, the participants expressed resistance to the implementation of IPP in the current processes at their facility. Therefore, while the health professionals are expected to practice interprofessionally, and for an interprofessional model of health to be implemented into rehabilitation services successfully, health professionals need to have a clear understanding of the terminology associated with IPP (Bierwas, Rogers, Taubman, Kroneberger, & Carroll, 2017). Moreover, it is necessary to explicate in a practical manner how health professionals could adopt IPP in the real world.

7.2.2. Objective 2: Describe the activities needed to promote IPP at PHC level through a systematic review

Given the global shift to an interprofessional model of patient management (Frantz & Rhoda, 2017), it is evident that there needs to be an investigation into the activities that promote IPP at PHC level. A systematic review of literature revealed four main activities that promoted IPP at PHC level, namely, *interprofessional clinics, interprofessional collaborative practice models, interprofessional collaborative care processes,* and *interprofessional team training*. Each of these activities were implemented into practice, using various methods. The review highlighted the importance of interprofessional communication, which not only promotes communication between health service providers, but also between health service providers and patients. All studies included in this review were conducted in developed countries, and therefore, failed to consider the challenges related to health service delivery in developing countries. This review is a starting point for the development of a model that promotes collaborative practice at the PHC level, as the implementation of a coordinated care structure appears to be the most feasible method of implementation.

7.2.3. Objective 3: Determine how the activities that promote IPP can be incorporated into the rehabilitation sector to address contextual challenges

It is essential to consider how the activities highlighted in the review could be utilized to address the barriers identified by health professionals in the initial phase. This objective enabled the researcher to conduct a situational analysis of the PHC facility utilized in the study. To achieve this objective, the researcher triangulated the data gathered during the first two phases of the study. The incorporation of the activities identified in the systematic review could

be used to address the contextual barriers highlighted in the FGD transcripts, according to a document analysis methodology. Therefore, these activities had to be integrated into PHC-level rehabilitation services.

The development of a logframe matrix during the planning phase of the logframe approach would guarantee the effective implementation of IPP within the rehabilitation sector at the PHC level. Nonetheless, it became apparent during the analysis phase that the matrix required additional information.

7.2.4. Objective 4: Develop and determine the feasibility of the interprofessional activity guidelines for the phases of the rehabilitation model at PHC through a Delphi study

In the final objective, the researcher employed the useful approach of the Delphi technique to gain the insights of experts as to how these activities could be implemented into the rehabilitatin sector at PHC level. In the first round of the Delphi study, open-ended questions relating to how the activities could be implemented into the rehabilitation sector at PHC level, gave rise to a set of items for each activity. The following round employed a 5-point Likert scale with which the experts rated the feasibility of each item. The convergence of opinion, which is the median of 3.24 for each guideline (Oliveira et al., 2018), resulted in a final set of items that was developed for each activity, in each phase of an existing rehabilitation model for PHC level (Table 7.1). The final set of items align to the sub-competencies for IPP; thus, aligning to IPP core principles as highlighted by the IPEC (2016). Therefore, these items are considered the guidelines that incorporate IPP into rehabilitation services at a PHC facility.

Considering the logframe matrix, the guidelines are considered the *key assumptions,* which are the aspects needed to achieve the activity (Goeschel et al. 2012). The sub-competencies that the guidelines align to are signs that quality rehabilitation services are offered to the population through IPP. Therefore, the sub-competencies are considered the *objectively verifiable indicators.* Finally, as these sub-competencies are performed by the staff at this PHC facility, they are demonstrating the acquisition/ development of the respective IPE core competencies. Thus, in this study, the demonstration of these core competencies are the *means of verification* that the activities were conducted by staff (Table 7.1).

Table 7.1 Logical Framework matrix

INPUT	ACTIVITIES	OUTCOMES	KEY ASSUMPTIONS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	OBJECTIVE
Focus group discussions *Systematic review*	*Systematic review*	*Systematic review*	*Delphi study*	*Delphi study*	*Delphi study*	*Rehabilitation model*
Human resources: Health professional staff Security Administrative staff *Physical resources:* Tick lists Patient information systems	Tick list of services for each patient entering a PHC facility at first point of contact	Reminder of available services at the PHC facility	1. IP discussions 2. All staff must develop the tick list 3. Tick list must be written in a culturally appropriate language style 4. List all the services at the facility 5. Highlight the medical needs of the patient	1. "Give feedback to others on their performance in the team" (CC5) 2. "Work in cooperation with thise who receive care, and those who provide care" (VE5) 3. "Use respectful language appropriate for crucial conversation" (CC6) 4. "Embrace the diversity of the patient,	Values/ Ethics Interprofessional communication	Coordinated structure of interprofessioal rehabilitation services

				population and health team" (VE3) 5. "Embrace the diversity of the patient, population and health team" (VE3)		
Human resources: Health professional staff Security Administrative staff *Physical resources:* Tick lists Patient information systems	Shared patient assessment form	Improved inteprofessional understanding	1. Discuss roles of represented staff 2. Identify overlapping roles 3. All staff must develop the form 4. Avoid discipline-specific jargon 5. Capture patient's current condition and progress	1. "Respect the expertise of other health professionals and the impact they can have on health outcomes" (VE4) 2. "Describe the process of team development and the roles and practices of effective teams" (TT1) 3. "Use available evidence to inform effective team work and team-based practices" (TT10) 4. "Communicate in a form that is understandable, avoiding discipline-	Values/ Ethics Teams and Teamwork Interprofessional communication	Patient access to rehabilitation services

				specific terminology when possible" (CC2) 5. "Place patients and populations at centre of interprofessional health care delivery" (VE1)		
Human resources: Health professional staff Students	Student-clinician education program	Improved patient access	1. Collaborate with local higher education institutions (HEIs) 2. HEIs to place students in interprofessional teams 3. Weekly student presentations on specific patient cases 4. Student-clinician discussions to develop collaborative care plans	1. "Perform effectively in teams and in different team roles in a variety of settings" (TT11) 2. "Apply leadership practices that support collaborative practice" (TT5) 3. "Engage in continuous professional and interprofessional development to enhance team performance and collaboration" (RR 8) 4. "Use unique and complementary abilities of all members of the	Teams and Teamwork Roles and Responsibilities	Patient-centred rehabilitation

				team to optimize health and patient care" (RR9)		
Human resources: Caregiver/family Health professional staff *Physical resources:* Patient information systems Consultation space	Caregiver/family consultation	Improved feasibility of processes of care	1. Decide on conditions to include 2. Involve rehabilitation care worker (if no family member present) 3. Space for family/ caregiver feedback in patient folder	1. "Explain the roles and responsibilities of providers and how the team works together to prevent disease" (RR4) 2. "Develop a trusting relationship with patients, families, and other team members" (VE9) 3. "Reflect on individual and team performance for improvement" (TT8)	Roles and Responsibility Values/ Ethics Teams and Teamwork	Caregiver and family involvement
Human resources: Caregiver/family Health professional staff *Physical resources:*	Shared decision-making model	Improved understanding of various interventions	1. Choose the virtual meeting space (e.g. apps) 2. Develop shared decision-making stationery	1. "Choose effective communication tools and techniques" (CC1) 2. "Use available evidence to inform effective teamwork and team-based practices" (TT10)	Interprofessional communication Values/ Ethics Teams and Teamwork	Education

Patient information systems Consultation space			3. Develop collaborative goals for patients 4. Include patients in decision-making 5. Include shared decision-making on tick list to show that it has been done	3. "Express knowledge and opinions to team members with confidence, clarity, and respect" (CC3) 4. "Listen actively, and encourage ideas and opinions of other team members" (CC4) 5. "Act with honesty and integrity in relationships with patients, families, communities and other team members" (VE9)		
Human resources: Health professional staff Administrative staff *Physical resources:* Meeting space	Regular interprofessional meetings	Development of collaborative care plans	1. Set dates and times in advance 2. Decide on virtual/ face to face meetings 3. Develop role clarification pamphlets 4. Collaborate with staff according to roles	1. "Choose effective communication tools and techniques" (CC1) 2. "Choose effective communication tools and techniques" (CC1) 3. "Maintain competence in one's own profession	Interprofessional Communication Values/ Ethics Roles and Responsibilities	Treatment choices

				appropriate to scope of practice" (VE10) 4. "Communicate ones role and responsibility clearly to patients, families, community members and other pofessionals" (RR1) "Recognize one's limitations in skills, knowledge and abilities" (RR2) "Engage diverse professionals who complement one's own expertise" (RR3)		

7.3. Implications of research

To incorporate IPP into PHC, successfully, a problem analysis of each sector should be conducted. In this way, researchers should be able to develop a model that would conceptualize the Healthcare Plan 2030 into the different sectors (McNaughton et al. 2021). The conceptual model would demonstrate how the current practices facilitate, or hinder, the implementation of Healthcare Plan 2030, as well as how the practices of IPP could address the problems to implement this provincial health policy successfully in these sectors. This implies that sessions should be conducted with health service providers in these sectors to develop an appropriate conceptual model.

However, an operational model or framework is required to ensure the successful translation into the other sectors at PHC level. Researchers could use the conceptual model to develop an operational model. The operational model requires activities and the implementation guidelines. This study could be used as a recommendation, regarding how the Healthcare Plan 2030 could be incorporated into a sector, through the lens of an interprofessional model of health service delivery. IPE facilitators should be approached to improve the understanding of health service providers, regarding IPP and its incorporation into clinical practice. It cannot be assumed that all health service providers received extensive IPE training in their tertiary qualifications.

By incorporating the guidelines that promote IPP into the rehabilitation sector at PHC level, a study could be conducted to measure the impact on patient and community health outcomes, as well as whether the Healthcare Plan 2030 had been implemented successfully. All stakeholders should be included in this study, including health service providers, patients, hospital management, and policy makers (McNaughton et al., 2021).

7.4. Limitations

The overall limitation of this study was that the operational model of the Healthcare Plan 2030 is presented; however, the guidelines have not been implemented, or evaluated. Consequently, this thesis merely presents the development of the guidelines that promote IPP in the rehabilitation sector at PHC level.

The following limitations were highlighted for the objectives of this study:

7.4.1. Limitations of the focus group discussions: Objective 1

The COVID-19 pandemic may have posed additional challenges to the current practices in the rehabilitation sector at PHC level (Halcomb et al., 2020). These challenges were not considered in this study, as the interviews with the health services providers had been conducted prior to the pandemic. However, this study could be used as a guide to the implementation of IPP, to address problems caused by the aftermath of the COVID-19 pandemic in the rehabilitation sector at PHC level.

7.4.2. Limitations of the systematic review: Objective 2

Despite the extensive search of literature, none of the studies included in this study was conducted in the South African PHC context. Given South Africa's unique political and socio-economic context, the challenges presented in its healthcare facilities differ vastly from the contexts presented in first world countries.

7.4.3. Limitations of the data triangulation: Objective 3

The findings from this stage revealed that the objectives in the existing rehabilitation model address the context-specific problems highlighted in objective 1. However, following the COVID-19 pandemic, the facility could be faced with additional challenges to those highlighted in the first phase of the study.

7.4.5. Limitations of the Delphi study: Objective 4

The Delphi process comprised two phases. In the first phase, 15 of the 20 experts participated, which is within the normal range for Delphi studies. In the second round, 11 of the initial 15 participated in the survey. A limitation of this objective is that a larger cohort of experts may have yielded a richer data set.

7.5. Recommendations

Since IPP is a novel concept in the South African health sector, it is recommended that training workshops be conducted with health service providers. In these workshops, concepts related to IPP need to be explained, as well as how IPP could be implemented, to address the problems at the facility. It is evident that the research design employed in this study was an effective way to develop guidelines that promote IPP. A case study, using the logframe approach as a methodological framework, allowed the researcher to develop guidelines to incorporate activities that promote IPP at PHC level. In addition, these activities address the context-

specific problems at the facility. Researchers, who aim to implement health policies into practice using IPP, are encouraged to use this research design.

The following recommendations were highlighted for the objectives of this study:

7.5.1. Recommendations following the focus group discussions

Following the implementation of the guidelines, developed in this study, it is recommended that a follow-up FGD be conducted, to determine whether the perceptions of health service providers, regarding IPP, have changed.

7.5.2. Recommendations following the systematic review

The limited studies included in the systematic review evidences the shortcomings in the field of activities that promote IPP at PHC level. The results from the systematic review suggest the need to conduct research into the activities that promote IPP at PHC level, within the South African context. However, it is recommended that, if there are no activities that promote IPP at PHC level in the local context, researchers develop context-appropriate activities.

7.5.3. Recommendations following the triangulation of data

The triangulation of data collected in the first two objectives may have changed. It is recommended that follow-up FGDs are conducted to establish a change in the contextual challenges. In addition, it is recommended that regular reviews of literature are conducted to explore contemporary and contextually relevant activities that promote IPP.

7.5.4. Recommendations following the Delphi study

Once the guidelines have been implemented in the rehabilitation sector at PHC level, and the impact of these guidelines have been determined, it would be important to evaluate how experts view the guidelines.

7.6. References

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7.7. Conclusion

In this chapter, the outcomes of the study were described. The activities that promote IPP at PHC level were used to develop the guidelines that incorporate IPP principles. Consequently, the outcome of this study was the development of an operational model for the Healthcare Plan 2030. In addition, the recommendations are described for each phase.

APPENDIX A

Focus group discussion information sheet

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INFORMATION SHEET

Project Title: The development of guidelines that incorporate interprofessional practice principles into the rehabilitation sector at a primary health care facility in the Western Cape

What is this study about?

This is a research project being conducted by **Luzaan Kock** at the University of the Western Cape. You have been chosen to participate in this research project because you work for a primary healthcare facility that provides rehabilitation services to the public. The goal of this study is to create guidelines for rehabilitation services at your community health centre that incorporate the principles of interprofessional practice.

What will I be asked to do if I agree to participate?

You will be asked to participate in a focus group discussion with your co-workers from different departments at your facility. For 45 to 60 minutes, the conversation will centre on how you understand, see, and feel about interprofessional practice. The conversation will be recorded and transcribed verbatim.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your confidentiality your name will not be mentioned, only the researcher will have access to the transcriptions. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

We will nevertheless minimise any possible risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

Recommendations can be made to government regarding how to develop models to ensure the successful implementation of the provincial health policy among all health service providers.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Your employment will not be influenced in any way in this study.

What if I have questions?

This research is being conducted by Luzaan Kock, Physiotherapy Department at the University of the Western Cape. If you have any questions about the research study itself, please contact Luzaan Kock at 083 431 9955/ lkock@uwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

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This research has been approved by the University of the Western Cape's Biomedical Research Ethics Committee (REFERENCE NUMBER: Ethics number – BM19/1/38)

APPENDIX B

Focus group discussion interview guide

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APPENDIX B: FOCUS GROUP INTERVIEW GUIDE

1. What is your understanding of interprofessional practice (IPP)?

1.1. How was IPP introduced to you? Workshops/ presentations?

1.2. Were you provided with the activities to incorporate IPP into your daily practice?

1.3. How is IPP incorporated into rehabilitation services at your facility?

2. What are your views on IPP at primary health care level?

2.1. How do you think it could be implemented?

2.2. What could the possible challenges be?

2.3. What possible activities do you think could be started to promote IPP?

3. How can an interprofessional rehabilitation model be successfully implemented at your facility?

3.1. Would you attend workshops on IPP?

3.2. What areas in IPP should the workshops focus on?

APPENDIX C

Focus group discussion binding form

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FOCUS GROUP CONFIDENTIALITY BINDING FORM

Title of Research Project: The development guidelines that incorporate interprofessional practice principles into the rehabilitation services at a primary health care facility

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve, and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone by the researchers. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits. I understand that confidentiality is dependent on participants in the Focus Group maintaining confidentiality.

I hereby agree to uphold the confidentiality of the discussions in the focus group by not disclosing the identity of other participants or any aspects of their contributions to members outside of the group.

Participant's name …….

Participant's signature ……

Date ……

APPENDIX D

Systematic review: methodological appraisal instrument

Dimension	Questions	Score
Reach	1. Does the article indicate who the interprofessional activity is intended for (Inclusion and exclusion criteria)	Y = 1 / N = 0
	2. Does the article report on the representativeness of the target population?	Y = 1 / N = 0
	3. Does the article report on participation rate?	Y = 1 / N = 0
Effectiveness	4. Does the activity achieve the intended objectives?	Y = 1 / N = 0
	5. Do they report on the limitations of the activity?	Y = 1 / N = 0
	6. Do they report on at least one outcome of the activity?	Y = 1 / N = 0
	7. Do they report on attrition rate?	Y = 1 / N = 0
Adoption	8. Is the setting clearly described?	Y = 1 / N = 0
	9. Does the evaluation report on the adoption of the activity by the participants or the organization?	Y = 1 / N = 0
	10. Reports on who delivered the program	Y = 1 / N = 0

Implementation	11. Describes the duration and frequency of the intervention	Y = 1 / N = 0
	12. Has the participants of the healthcare setting been involved in delivering the activity?	Y = 1 / N = 0
	13. Do they report on intended and delivered activities?	Y = 1 / N = 0
Maintenance	14. Does the article report on long term effects of the activity (after 6 months)?	Y = 1 / N = 0
	15. Do they report on the indicators used for activity follow-up?	Y = 1 / N = 0

APPENDIX E

Delphi study information sheet

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DELPHI STUDY INFORMATION SHEET

Project Title: The development of guidelines that incorporate interprofessional practice principles into the rehabilitation sector at a primary health care facility in the Western Cape

What is this study about?

This is a research project being conducted by **Luzaan Kock** at the University of the Western Cape. We are inviting you to participate in this research project because you are considered an expert in the field of interprofessional education and practice/ primary health care/ rehabilitation. The purpose of this research project is to develop and implement an interprofessional rehabilitation model.

What will I be asked to do if I agree to participate?

You will be asked to complete an online questionnaire in Google Forms on the incorporation of interprofessional activity guidelines in a proposed rehabilitation model for primary health care level. The questionnaire will thus be completed in an environment that is comfortable and safe for you and will take no longer than 10 minutes to complete. After completing this initial

survey, you will receive an invitation to participate in an online survey where you will be required to score the statements gathered during the first round.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your confidentiality your name will not be mentioned, only the researcher will have access to the completed questionnaires. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

We will nevertheless minimise any possible risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

Recommendations can be made to government regarding how to develop models to ensure the successful implementation of the provincial health policy among all health service providers.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Your employment will not be influenced in any way in this study.

What if I have questions?

This research is being conducted by Luzaan Kock, Physiotherapy Department at the University of the Western Cape. If you have any questions about the research study itself, please contact Luzaan Kock at 083 431 9955/ lkock@uwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

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This research has been approved by the University of the Western Cape's Biomedical Research Ethics Committee (REFERENCE NUMBER: Ethics number – BM19/1/38)

APPENDIX F

Delphi study consent form

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APPENDIX F: DELPHI STUDY CONSENT FORM

Title of Research Project: The development of guidelines that incorporate interprofessional practice principles into the rehabilitation sector at a primary health care facility in the Western Cape

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve, and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone by the researchers. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

Participant's name …….

Participant's signature …….

Date ……

APPENDIX G

Delphi questionnaire – round 1

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APPENDIX G: OPEN-ENDED ONLINE QUESTIONNAIRE

1. Demographics:

1.1. What is your professional discipline?

1.2. What is your area of expertise? (You can tick more than one option)

Interprofessional education and practice

Primary health care

Rehabilitation

1.3. How long have you been working in this field of expertise?

Less than 5 years

5 – 10 years

More than 10 years

2. Inteprofessional practice in the rehabilitation sector at primary health care level:

2.1. How do you think a tick list of services for each patient entering a PHC facility can ensure the delivery of effective interprofessional health services?

2.2. The development and implementation of a shared patient assessment form ensures that all health professionals have access to the appropriate information of the

patient. What do you think the efficacy of shared patient assessment forms is to improve patient access to rehabilitation services?

2.3. A student-clinician education program at the PHC facility encourages short, regular meetings such as daily huddles and team visits as opportunities for students and health professionals to discuss collaborative care plans. How do you think a student-clinician education program can be incorporated into PHC to encourage patient-centred care?

2.4. Caregivers and families play a role in the decision making of the patient. What is the benefit of involving the patient's family/ caregiver in patient consultation?

2.5. A shared decision-making model involves the patients and health professionals in developing a collaborative care plan. How do you think a shared decision-making model can be employed practically to ensure patient education and health professional information sharing?

2.6. Regular meetings between health professionals ensures constant information sharing between those providing care. In our current inundated PHC system, how do you think regular meetings can be incorporated to ensure that a patient has a range of interprofessional treatment options?

2.7. What is your view on the feasibility of these activities at a PHC level?

2.8. Any additional comments/ suggestions?

APPENDIX H

Delphi questionnaire – round 2

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APPENDIX H: LIKERT SCALE QUESTIONNAIRE

1. Phase 1 of the Rehabilitation Model: Interprofessional Health Services. Activity: A tick list of services for each patient entering a PHC facility at first point of contact. The guidelines aligned to the activity in phase one should include:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Interprofessional discussions					
All staff must develop the tick list					
Tick list must be written in a culturally appropriate language style					
List all the services at the facility					
Highlight the medical needs of the patient					

2. Do you have any additional guidelines for the development and implementation of tick list of services for each patient entering a PHC facility at first point of contact?
3. Phase 2 of rehabilitation model: Patient access to rehabilitation services. Activity: Shared patient assessment form. The guidelines aligned to the activity in phase two should include:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Discuss roles of represented staff					
Identifies overlapping roles					
All staff must develop the form					
Avoid discipline-specific jargon					
Captures patient's current condition and progress					

4. Do you have any additional guidelines for the development and implementation of a shared patient assessment form?
5. Phase 3 of rehabilitation model: Patient-centred rehabilitation. Activity: Student-clinician education program. The guidelines aligned to the activity in phase three should include:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Collaborate with local higher education institutions					

Higher education institutions to place students in IP teams					
Weekly student presentations on specific patient cases					
Student-clinician discussions to develop collaborative care plans					

6. Do you have any additional guidelines for the implementation of a student-clinician education program?
7. 4. Phase 4 of rehabilitation model: Caregiver and family consultation. Activity: Caregiver and family consultations. The guidelines aligned to the activity in phase four should include:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Decide on conditions to include					
Involve rehab care worker (if no family member present)					
Space for family/ caregiver feedback in patient folder					

8. Do you have any additional guidelines for the implementation of caregiver and family consultations?
9. Phase 5 of rehabilitation model: Education. Activity: Shared decision-making. The guidelines aligned to the activity in phase five should include:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Choose the virtual meeting space (e.g. apps)					
Develop SDM stationery					
Develop collaborative goals for patients					
Include patients in decision-making					
Include SDM on tick list to show it has been done					

10. Do you have any additional guidelines for the implementation of shared decision-making?

11. Phase 6 of rehabilitation model: Treatment choices. Activity: Regular meetings. The guidelines aligned to the activity in phase six should include:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Set dates and times in advance					
Decide on virtual/ face-to-face meetings					
Develop role clarification pamphlets					
Collaborate with staff according to roles					

12. Do you have any additional guidelines for the implementation of regular meetings?

APPENDIX I

Ethics approval letter

UNIVERSITY of the WESTERN CAPE

OFFICE OF THE DIRECTOR: RESEARCH
RESEARCH AND INNOVATION DIVISION

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08 August 2019

Ms L Kock
Physiotherapy
Faculty of Community and Health Sciences

Ethics Reference Number: BM19/1/38

Project Title: The development of an interprofessional rehabilitation model at primary health care level in the Western Cape.

Approval Period: 08 August 2019 – 08 August 2020

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

BMREC REGISTRATION NUMBER -130416-050

FROM HOPE TO ACTION THROUGH KNOWLEDGE

APPENDIX J

Editorial letter

Idra Corporation t/a

AQUARIAN PUBLICATIONS

24 February 2022

To whom it may concern

Dear Sir/Madam

RE: Editorial certificate

This letter serves to prove that the thesis listed below was language edited for proper English, grammar, punctuation, spelling, as well as overall layout and style by myself, publisher/proprietor of Aquarian Publications, a native English speaking editor.

Thesis title

THE DEVELOPMENT OF INTERPROFESSIONAL GUIDELINES INTO A REHABILITATION MODEL AT A PRIMARY HEALTH CARE FACILITY

Author

Luzaan Kock

The research content, or the author's intentions, were not altered in any way during the editing process, and the author has the authority to accept, or reject my suggestions and changes.

Should you have any questions or concerns about this edited document, I can be contacted at the listed telephone and fax numbers or e-mail addresses.

Yours truly

E H Londt
Publisher/Proprietor

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Whom It May Concern

I, Cyril JM Clarke, the undersigned, a qualified editor, hereby declare that I have edited the following academic doctoral thesis:

Title

THE DEVELOPMENT OF GUIDELINES THAT INCORPORATE INTERPROFESSIONAL PRACTICE PRINCIPLES INTO REHABILITATION SERVICES AT A PRIMARY HEALTH CARE FACILITY

written by

Luzaan Kock

in fulfilment of the requirements of the

PhD Degree in Physiotherapy

at the Department of Physiotherapy at the University of the Western Cape.

I have suggested changes regarding the use of grammar and language. I have also suggested changes regarding the layout and references in the text. However, I cannot guarantee that all my suggested amendments have been implemented.

Kind regards

CJM Clarke
04 November 2022

APPENDIX K

Change of thesis title

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HIGHER DEGREES COMMITTEE

CHANGE OF THESIS TITLE

Candidate	KOCK							**SURNAME**	LUZAAN	**FIRST NAMES**	
Student No	2	9	2	7	1	2	8	**Degree**	**PhD**	**Department**	**Physiotherapy**

Is the student a staff member (this includes full-time, part-time, academic and non-academic staff members)**?**	**Yes** √	**No**

Current Thesis Title	**The Development of Interprofessional Guidelines into a Rehabilitation Model at a Primary Health Care Facility**
New Thesis Title	The Development of Guidelines to Incorporate Core Principles of Interprofessional Practice into Rehabilitation Services at a Primary Health Care Facility

Comment/Motivation

There is no change in the methodology of the thesis..

Supervisor	Prof Nondwe Mlenzana

Supervisor … …….. Date 28 September 2021